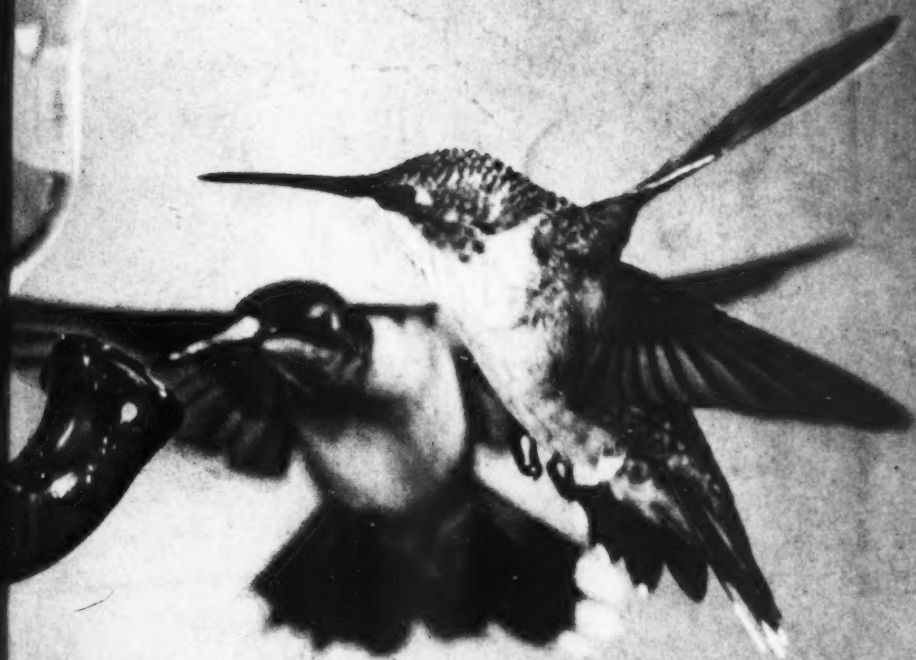


MINICAM PHOTOGRAPHY

OCTOBER 25c



"CAMERA PAYS WAY THROUGH COLLEGE"

SPECIAL SHOW NUMBER—NEW PHOTO PRODUCTS
TO TAKE GOOD PICTURES. "DON'T LET SPEEDY SUBJECTS FAZE YOU"



MAISE-NUT

BY CHARLES BREIJER, AMSTERDAM

●October is the last month for "Harvest Pictures." Ride into the country the next sunny week-end with an eye peeled for golden ears of corn, frost-sparkling orange pumpkins, ripe purple grapes. If you find a stand of maples grouped against a bright blue sky—there's a color composition that won't let you "miss." The stores and street markets bring this harvest of color to the city. It's everywhere waiting for your camera.



A peach of a pair

YOU will appreciate the enthusiasm of a great many photographers when you use this pair of famous enlarging papers—Brovira and Cykora.

Agfa Cykora is noted for its rich, warm tones, controllable over a wide range in development. It has wide latitude and low safe-light sensitivity. It is supplied in three contrast grades (four in glossy) and a variety of attractive surfaces.

Brovira is famous for its lustrous blacks—clear, deep, and rich. A fast bromide paper, it has remarkable latitude and permits wide control over contrast by manipulation in development. Brovira comes in a range of contrasts and surfaces on single and double weight stock.

Try Agfa Cykora and Agfa Brovira today . . . **Agfa Ansco, Binghamton, New York.**

Agfa

CYKORA BROVIRA

PAPERS

MADE IN U. S. A.



MINICAM

THE MINIATURE CAMERA MONTHLY

EDITED BY WILL LANE, A. R. P. S.

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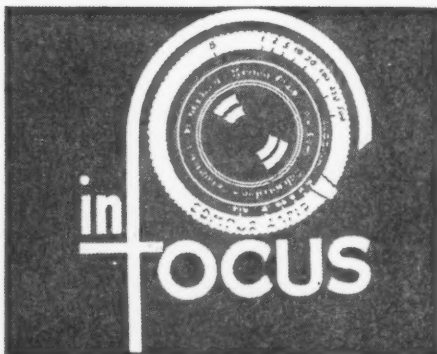
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Cover by Dr. H. E. Edgerton (See Page 105)



"7,000 Miles Away"

Sirs:

With reference to "IN FOCUS," June issue, there was a picture of Miss Marjorie Walden taken at a recent beauty contest, held for the benefit of camera fans. I dare say that I am in par with Earl Carroll or Billy Rose in



judging and picking out a beauty, though I live nearly 7,000 miles from the scene.

I am enclosing a photograph of Miss Walden taken from the screen during a news reel. Data:

MINICAM PHOTOGRAPHY (TITLE REG. U. S. PAT. OFF.). PUBLISHED AT 13 S. 17TH ST. CINCINNATI, O. EDITOR, WILL LANE, A.R.P.S. BUSINESS MANAGER, A. M. MATHIEU. EDITORIAL ASSOCIATES: HENRY CLAY GIFFON, HENRY HOLMES SMITH. CONTRIBUTING EDITORS: JACOB DESCHER, A.R.P.S., JACE POWELL, J. SHILAN LOOTENS, F.R.P.S., VICTOR WASSON. ART DIRECTOR JOE WOOD. PUBLISHED MONTHLY BY THE AUTOMOBILE DIRECT PUBLISHING CORP. YEARLY SUBSCRIPTION, \$3.50 IN U. S. A. AND POSSESSIONS, CANADA AND COUNTRIES IN PAN-AMERICAN POSTAL UNION, \$3.50. ELSEWHERE, \$3.50. SINGLE COPIES, 25c. EASTERN ADVERTISING OFFICE: EVERETT GELLERT, 42 WEST 45TH STREET, NEW YORK CITY, TELEPHONE VA. 4-2154. MID-WEST ADVERTISING OFFICE: BERNARD A. ROSENTHAL, 113 NORTH MICHIGAN AVE., CHICAGO, ILL., TELEPHONE FRANKLIN 7100. WEST COAST OFFICE: A. ROYENBERG, 3775 WILSHIRE BLVD., LOS ANGELES, CALIF., TELEPHONE PI 8131. ENTERED AS SECOND CLASS MATTER AT CINCINNATI, O., MARCH 31, 1938, UNDER THE ACT OF MARCH 3, 1879. PRINTED IN U. S. A.

Leica IIIB, $\frac{1}{8}$ second at $f/2.2$. I shall be very happy to communicate with any readers who have photographs of Miss Walden taken in similar pose. I shall be pleased to trade prints with them on Chinese subjects of salon quality.

GEORGE C. LAU.

No. 8 Kent Road, Kowloon Tong,
Hong Kong, China.



The Graf Spee in Flames

"The Graf Von Spee"

Sirs:

In a recent issue you published a letter from Mr. Daniel W. Burrows, stating that he had taken a photo at one second exposure hand-held to disprove a statement made in a previous issue of MINICAM.

I endorse Mr. Burrows's statement — photos can be taken with a second exposure without the use of tripod or support, but (and this *but* is very important!) it is not something that should be practiced too often, for if you do get a good shot with such a long exposure, don't pat yourself on the back long, but rather take out that rabbit's foot and thank your lucky stars. A hand-held one-second shot that turns out all right is pure luck through and through!

Shots at a slower speed than $1/25$ th should never be taken without some support, unless

the occasion be exceptional. The occasions when long exposures are necessary and you are unprepared for them are few and far between.

I have included with this letter a photo taken by myself under exceptional circumstances with one second exposure. I had traveled by plane from Buenos Aires to Montevideo to get some pictures of the German vessel, *Graf Spee*. After having spent most of the afternoon taking pictures of her from a tug as she lay in Montevideo harbor, I went to see some friends, as the sun started to go down, who lived in a flat near the port. When I arrived there, I found them looking out of the window at the *Graf Spee*, which was moving slowly. We went up to the roof of the building to watch. I had used up during the afternoon all my film except for four frames of Panatomix X in my Kodak Bantam Special, which I had hung around my neck.

In order to get a better view of the German

Used by MAJOR PICTURE STUDIOS



FRED ARCHER—Director of Photography, Art Center School, uses 3 Dinky-Inkies. Photo by Charles Potts.

Portrait of Miss Marjorie Sullivan shows what can be accomplished by using only Dinky-Inkies.

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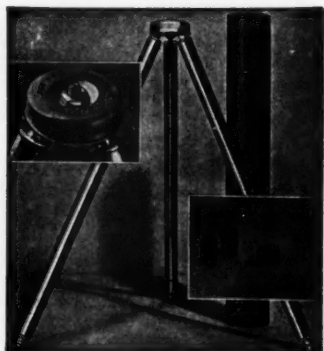
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vessel going out of the harbor, with the setting sun silhouetting her and a flaming red sky overhead, I climbed up on to a wall about 25 cms. wide. Following the *Graf Spee* out was the oil tanker *Tacoma*, which had been a supply ship for the warship, and which can be seen to the left in the picture.

When the *Graf Spee* was about seven miles out and the setting sun level with the horizon there was a loud report and a flash of flame from the vessel, almost as though she had fired a salvo. Hardly realizing what I was doing, I opened my camera, set the shutter speed and opening and shot the picture. My next shot is a little moved and the next two underexposed, for the light dropped rapidly.

I am still amazed today that I should have gotten a picture at all, for this print represents only a fraction of the negative. I had no telephoto lens. The photo was taken without a sunshade or filter, directly at the sun, a guessed exposure, hand-held for one second, and balancing myself on a wall. Luck? — I'll say I had plenty, but it was an occasion that merited taking that chance, for had the vessel sunk there and then I should have been able to have sold my picture for good prices, for I doubt if there are any other pictures of the *Spee* taken at that time. All pictures I have seen were taken early next morning, except for those taken much later on during the evening and night, which show only a fraction of the vessel in flames.

R. DEBENHAM CLARK.

Buenos Aires,
 Argentina, South America.

"On the Right"

Sirs:

Would you want to prove to your readers that I'm not an "old man" for all of my twenty-five years of photographing Presidential



candidates? Maybe this picture taken in Rushville, Indiana, will convince them. I'm on the right.

FRANK J. MERTA.

Bellerose, L. I.

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Investigating*

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Effective, Pocket-Fitting Units

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The \$1.50 Units have ingenious hot lamp ejectors. Edison base unit fits other holders and synchronizers.



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1043 Colfax Street Griffith, Indiana

VICTOR *Photographic Lights*



"Civilization, 1940"

"You Can't Fool Gravity"

Sirs:

In the picture "Civilization, 1940" published in the August issue of MINICAM PHOTOGRAPHY, the beads in the rosary apparently defy the law of gravitation.

If the print had been used as made, the "hang" of the beads would be O. K.

ROBERT FELVER, JR.

Phillipsburg, N. J.

Turn the picture so the right-hand side becomes the bottom (as in the illustration above) and both the Law of Gravity and our hawk-eyed reader who corrected us are satisfied.—Ed.

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"Coincidence at Lake Patzcuaro"

Sirs:

On page 44 of April MINICAM I notice a picture taken at Lake Patzcuaro, in the state of Michoacan, Mexico, by Gordon C. Abbott.



"The Haul" by Abbott



"The Last Haul" by Porter

Enclosed with this letter are pictures made of apparently the same fishermen which I took about April 1935, and which I called "The Last Haul," because it was the last haul the fishermen made that particular morning, and it was also the last exposure on the last roll of film that I had with me.

Another coincidence about this picture is that I met Mr. Abbott, whose address at that time was Calle de Las Delicias 3, Taxco, Guerrero, Mexico. His picture must have been taken after mine because I notice that he used Panatomic-X film which was not manufactured until several years after my picture was made. I showed my picture to Norman Bel Geddes in Mexico City and he liked it so well that he decided to take a trip to Lake Patzcuaro himself.

Thinking that you might be interested in this coincidence, I am sending the picture to you.

ARTHUR R. PORTER, JR.,
Memphis, Tenn.

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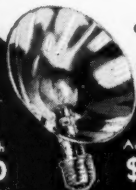
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Da-Lite Screen Company, Inc.

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MAX RAYMER

For a big blow-up

Speed considered, each of the Du Pont 35mm Films is amazingly fine grained. Whichever you select as best suited to the subjects and lighting you expect to encounter, you can rest assured of having negatives capable of generous enlargement.

Superior-1, a film of moderate speed and extremely fine grain size, practically eliminates the problem of grain in miniature camera photography.

Superior-2, with twice the speed, produces a negative capable of enlargement to salon size or better without objectionable graininess.

Superior-3, an exceptionally fast film, still retains the fine grain qualities essential for successful use in a 35mm camera.

Each film is fully panchromatic, possesses wide latitude, and has good non-halation properties. They are available at leading photographic stores in 18 and 36 exp. magazines, 36 exp. spools, and in bulk lengths and refills. Du Pont Film Manufacturing Corp., Inc., New York, N. Y.



SUPERIOR-1
Fine Grain

SUPERIOR-2
All-Purpose

SUPERIOR-3
High Speed

"Wife vs. Camera"

Sirs:

My camera was dear to me, but I loved my wife and she had handed down the decision that dark-room work at home must go. (We had just been married the week before.)

Then we started on a tour of house furnishing departments all over town, so that we could decide what we wanted in our new home. I kept taking pictures (my swan song). A few days later we tried to recall all that we had seen, and as various matters were not too clear I produced my enlargements of all the pictures I had taken. It was a much simplified task after that. And best of all, she is looking forward to the day when she will be able to use our camera.

Keep that idea in mind and you may be able to make your wife a co-worker in your hobby.

A. BAKER.

Chicago, Ill.

"Rackbrain"

Sirs:

I have been an enthusiastic reader of MINICAM for over two years, and at present it rates first with me, but when a rackbrained guy named Wasson starts doing those Foto Futurama things, the latest of which appears on page 82 (August),



well, then I begin to doubt the sanity of your editors. This one especially amused me out of its sheer stupidity and impracticability. What made me laugh most were those finger grips, as well as that built-in flash reflector. The streamlined shutter release is a honey, too. I would suggest that you critically examine his future drawings more closely, before you go to press, or we'll all be nuts.

S. WARSAW.

Bronx, N. Y.

P. S.—I bet you won't publish this letter!

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- ★ New Easy-to-use Exposure Calculating Dial
- ★ ALL-METAL die cast body, leather covered and trimmed in Satin Chrome
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MAX RAYMER

For a big blow-up

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Then we started on a tour of house furnishing departments all over town, so that we could decide what we wanted in our new home. I kept taking pictures (my swan song). A few days later we tried to recall all that we had seen, and as various matters were not too clear I produced my enlargements of all the pictures I had taken. It was a much simplified task after that. And best of all, she is looking forward to the day when she will be able to use our camera.

Keep that idea in mind and you may be able to make your wife a co-worker in your hobby.

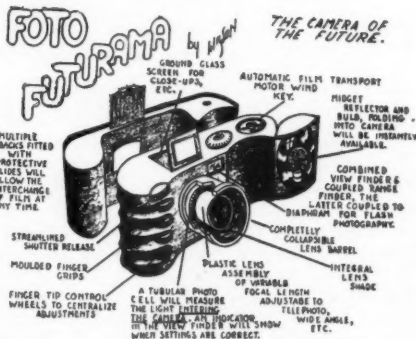
A. BAKER.

Chicago, Ill.

"Rackbrain"

Sirs:

I have been an enthusiastic reader of MINICAM for over two years, and at present it rates first with me, but when a rackbrained guy named Wasson starts doing those Foto Futurama things, the latest of which appears on page 82 (August),



well, then I begin to doubt the sanity of your editors. This one especially amused me out of its sheer stupidity and impracticability. What made me laugh most were those finger grips, as well as that built-in flash reflector. The streamlined shutter release is a honey, too. I would suggest that you critically examine his future drawings more closely, before you go to press, or we'll all be nuts.

S. WARSAW.

Bronx, N. Y.

P. S.—I bet you won't publish this letter!

Announcing

The NEW argus COLORCAMERA

A New and Revolutionary Camera Designed Especially for Color

● Everything you need for superb Color Photography—everything the exacting Black-and-White photographer could ask for—all combined in a beautiful low-priced precision-built camera.

A PHOTOELECTRIC Exposure Meter—built-in—gives you accurate exposure readings from 1.4 to 2050 footcandles, a much greater range than most meters selling at \$14 to \$25. The meter is instantly removable for close-up readings, is built by a nationally known manufacturer, and is guaranteed for one year.

The Speedy f:4 Lens is color corrected far beyond the minimum required for faithful color reproduction, and has just the right margin of extra speed for fully exposed, brilliant color transparencies. It is custom-fitted in a new, smooth-working continuous focusing mount, calibrated for distances from 1 foot to infinity—no expensive portrait or copying attachments to buy.

The ALL METAL Die-Cast Body is amazingly slim and compact, leather-covered, and trimmed in a lustrous Satin-Chrome finish. The re-wind key and positive back-lock fold neatly into the streamlined body, making a truly pocket size camera. Many other refinements include a one-piece removable back-and-bottom for easy loading, a new non-scratch film track, a new positive exposure recording mechanism, and provision for removing partially exposed film outside a darkroom. Any standard 35 mm. film cartridge—Kodachrome or Black-and-White will fit. Your Argus dealer will be featuring this new Colorcamera soon—be sure to see it. Price \$25.00.

The NEW Argus Model A3

At a considerably lower price, this newly designed addition to the famous Argus "A" series offers all of the features contained in the Colorcamera with the exception of the Photo-electric Exposure Meter. It is fitted with the same f:4 lens in a continuous focusing mount, has shutter speeds from 1/25 to

1/150, Time and Bulb, and contains a built-in Extinction-type Exposure Meter with a new easy-to-use calculating dial. The same beautiful Satin Chrome finish and leather covering make this unbelievably slim camera the year's outstanding value in the lower price range. **\$15**
Price

SEE THE 6 OTHER ARGUS MODELS *All American Made*

MODEL E ARGOFLEX
2½ x 2½ Twin-Lens Focusing
Reflex **\$35**
MODEL C-3—f:3.5 Coupled
Range Finder—35 mm. . . **\$30**
with Synchronized Flash
MODEL C-2—f:3.5 Coupled
Range Finder—35 mm. . . **\$25**
without Flash
MODEL A2—f:4.5 . . . **\$12.50**
MODEL A—f:4.5 . . . **\$10**
MODEL M—f:6.3 . . . **\$7.50**

All These NEW FEATURES

★ f:4 lens, color corrected, Anastigmatic triplet

★ PHOTOELECTRIC Exposure Meter—removable for close-up readings—GUARANTEED

★ New Easy-to-use Exposure Calculating Dial

★ ALL-METAL die cast body, leather covered and trimmed in Satin Chrome

★ Rugged Automatic Shutter with Speeds from 1/25 to 1/150, Time and Bulb

★ Easy Loading, no re-winding unless desired

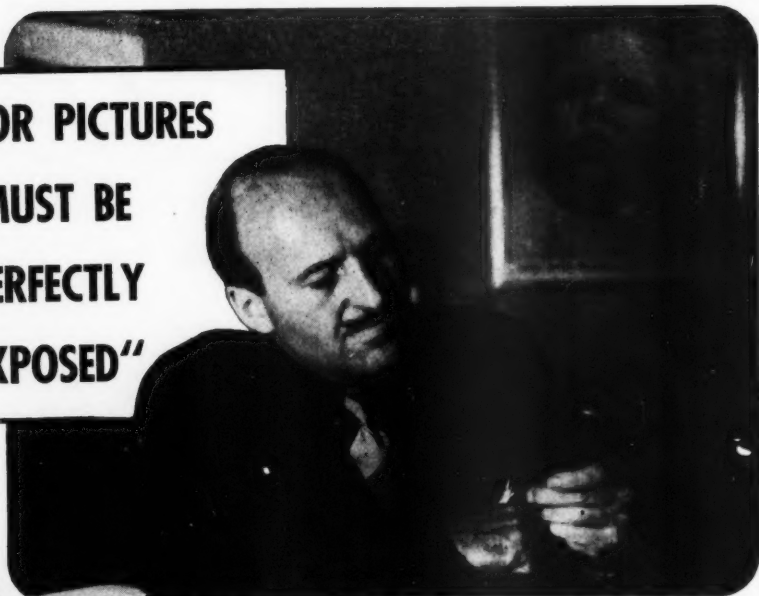
New Non-scratch film track



argus

SUBSIDIARY OF
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ANN ARBOR, MICH.

**"COLOR PICTURES
MUST BE
PERFECTLY
EXPOSED"**



—SAYS IVAN DMITRI
noted *Saturday Evening Post* cover photographer

"MY assignments call for color pictures all over the world. Aerial shots, landscapes, and portraits from the north temperate zone to the tropics.

"When you're working within the very narrow latitude of color film, exposures must be right. Seemingly identical days during different seasons call for vastly different exposures. Although the human eye adjusts itself to changing light conditions, it cannot accurately calculate differences in exposure.

"Many of the pictures I take are on occasions that cannot be duplicated. Others are made on special sets that cannot be held for retakes. These shots must be just right for perfect four-color reproduction. I find my G-E meter an indispensable aid in accurately compensating for all variables."

The General Electric exposure meter covers a brightness range from 0.05 to 1700 candles per square foot. Film speeds up to 800. Stops from f:1 to f:44, shutter

speeds from 1/2500 to 100 seconds. Simplified calculator with locking device. Designed for one-hand operation. Specially arranged for printing and enlarging. Ask for the meter that's used first to *take*, then to *make*, perfect pictures.

NEW G-E METER FOR MOVIE MAKERS

It's the new Type DW-49—incorporating all quality and accuracy features of the Type DW-48, but designed especially for movie makers. It has a new pre-set calculator, which you set and lock before taking a reading. No further adjustment necessary. It's quick, convenient, accurate. Equally adaptable for stills. Price \$21.

If you own a Type DW-48, you can have a DW-49, too—and enjoy the advantages of both meters—by purchasing (for \$4.85) the new interchangeable hood with pre-set calculator at your dealer's. Or write to General Electric, Schenectady, N. Y.

GENERAL  ELECTRIC

604-1112

PHOTOGRAPHING PRESIDENTIAL CANDIDATES

★ ★ ★ *from* WILSON ★ ★ ★ *to* WILLKIE

BY FRANK J. MERTA, ACME NEWS PICTURES

● I GOT MY FIRST CHANCE TO shoot a political news picture when I was fifteen. It was on assignment too! At the time I was a darkroom boy at the Paul Thompson Photo Service, a ranking New York picture agency in the old days. One noon my boss called me into his office.

"Frank," he said, "we're short a photographer. I want you to cover that Democratic rally they're holding downtown this afternoon. Think you can do it?"

Could I! I ran into the loading room and began to slip the 5x7 glass plates into the heavy old plate magazine that held a dozen. I got out the big 5x7 Press Graflex that I was to use and polished the enormous ten-inch lens that stuck out the front in its bright brass mount. My heart was beating triple-time as I put the outfit in its case and set out, via street car, for the rally.

When I got there, I found that Al Smith, who was worshipped by us New York boys and was campaigning for sheriff, was the speaker. That made it all the better. The Graflex box was heavy,

and the plate magazine didn't make the outfit any easier to handle, but I got those shots. I think I gave them 1/25 at f8.

Nobody knew it, (not even my boss, who raised my salary from \$5.00 to \$7.00 a week because I actually brought back some pictures) but that photograph of Al Smith made my first news picture also a picture of a Presidential candidate-to-be!

Since 1916, I've been taking news pictures of them all. That was the year I almost singed the Republican candidate's whiskers. I was assigned to get pictures of Charles Evans Hughes after he had addressed some New York business men on Chambers Street.

The candidate had just left the building, and I had taken one flash picture of him, using an Imp speed flash gun and my 10x15cm. Ica camera. As he stepped into his car, I began pouring another shot of flash powder into the pan to get a shot of Mr. Hughes waving at the crowd.

There was a terrific flash, a spark in the gun had set off my powder bottle.

(Page 93, please)

[For famed Merta pictures see following 4 pages]





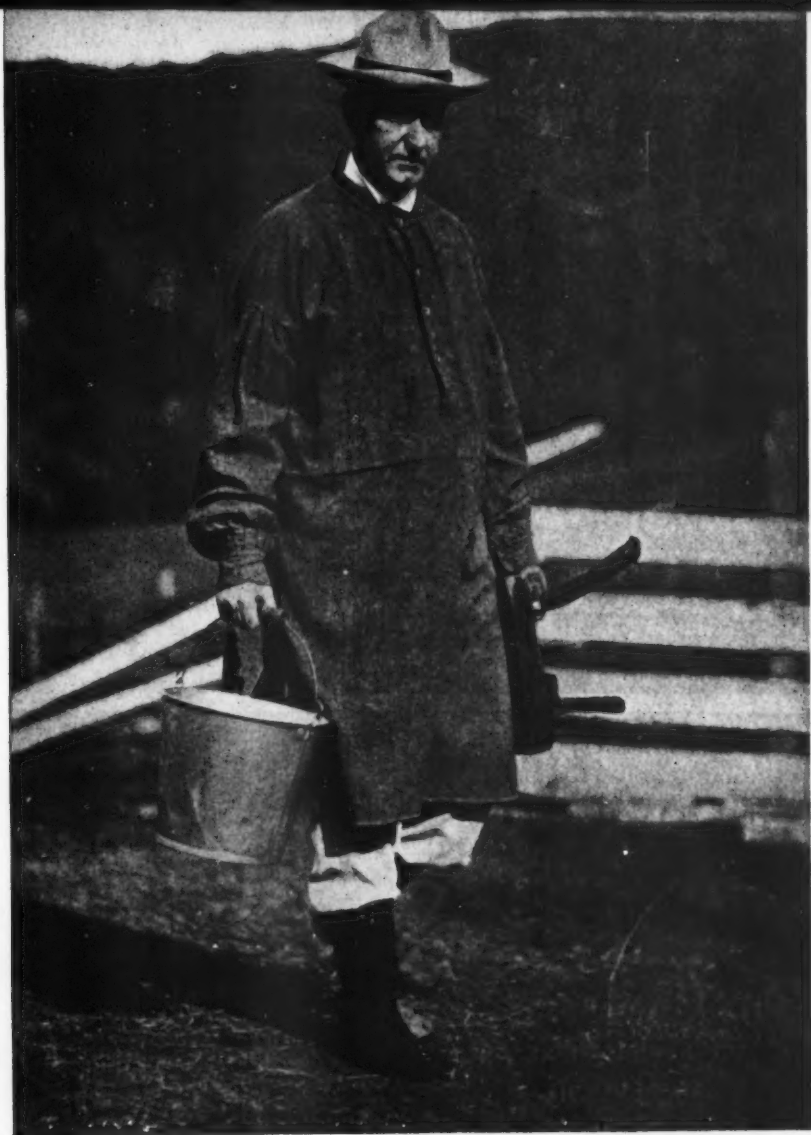
MY BEST PICTURE of Franklin D. Roosevelt, probably the most photographed political figure of all time, was taken in 1932 on election night. Flash bulbs and synchronizers were just coming into wide use among news photographers at the time of Mr. Roosevelt's first nomination. For the first time it was possible to take action pictures in the convention hall because the danger and nuisance of smoky flash powder had been eliminated by the new flash bulbs.

FIG. 1

THE MOST PHOTOGENIC Presidential Candidate of this generation has turned out to be Wendell L. Willkie. While he listened to the balloting at the Philadelphia Convention the news photographers got some great photographic studies of a man on edge. He doesn't mind being photographed no matter how close you get to him. His gestures with his hands and his ruffled hair are ideal details for candid pictures. The No. 5 "nut" midget flash bulb is a big help in picturing this campaign. I now use an Abbey flash gun and reflector with an adapter for these bulbs. I have carried as many as 15 of these bulbs in one pocket and with the aid of an ejector on the adapter, can be set for another picture in a couple of seconds.

FIG. 2





CALVIN COOLIDGE was, in my mind, the most colorful candidate to photograph. During his campaign for his second term in office, editors wanted pictures showing him doing farm work at his Plymouth, Vermont, home. He came out to pose wearing business clothes. At the request of the press photographers he changed to some of his father's old clothes to pose as a typical New England farmer. News cameramen were just beginning to use Speed Graphics

and flash powder. Once, when pressed for time at a small gathering of politicians he suggested that the photographers who were touring with him use plenty of powder flashes in the small hall where the meeting was held. The hall filled with smoke, and police threw the photographers out, but the candidate had a dandy excuse for cutting the meeting short. As he left, with a typical Coolidge grin he winked at the cameramen.

FIG. 3

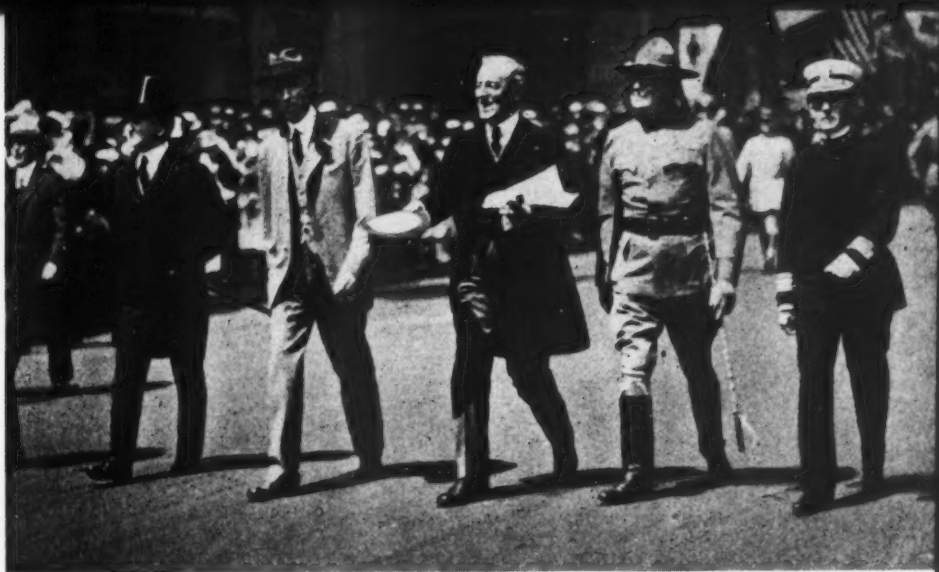


THE SPHINX SMILES. Herbert Hoover, both as candidate and President, was rarely photographed smiling. To offset the solemnity of his usual expression, during his 1928 campaign, news photographers made wide use of the famous hand-wave pose. The last pictures I took of Mr. Hoover as President were during the ride down Pennsylvania Avenue with President-Elect Roosevelt in 1933. The two men made an impressive contrast: Hoover the solemn man and Roosevelt the smiling winner. FIG. 4



MY MOST SERIOUS ACCIDENT occurred in 1916 when I was pouring flash powder into a flash gun for a picture of Charles

Evans Hughes (center above with Harding and Dawes). The powder exploded, putting me in the hospital for six weeks. FIG. 5

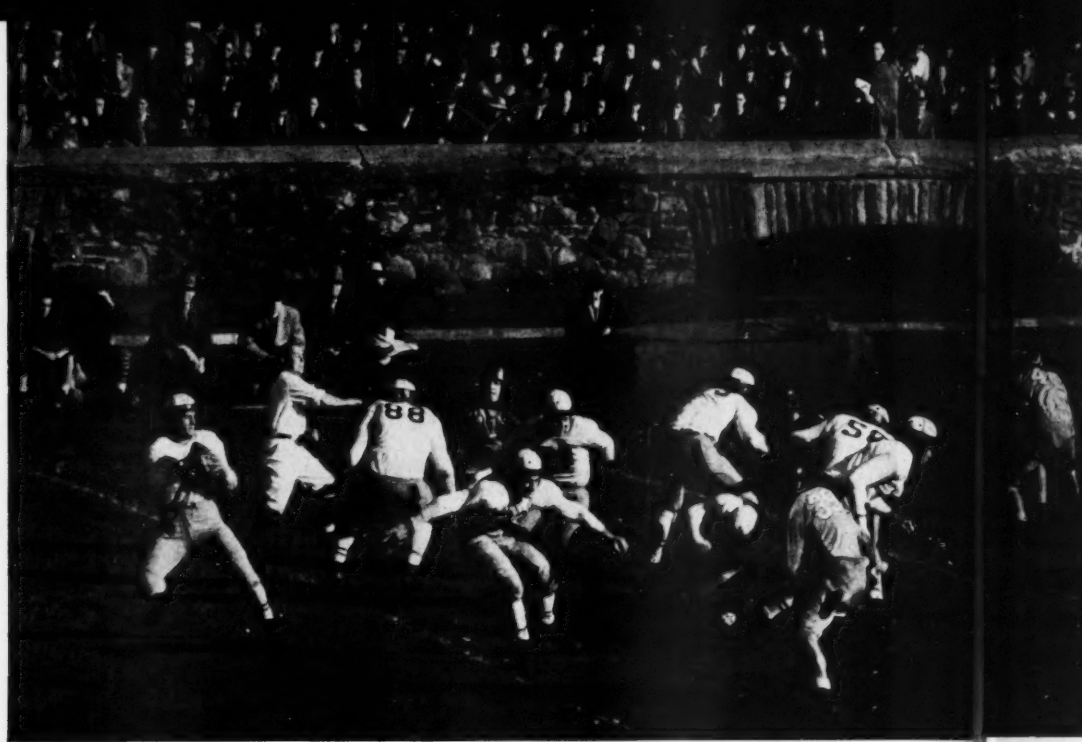


SECRET SERVICE MEN helped me get this exclusive picture of President Wilson leading a gigantic Red Cross parade down New York's Fifth Avenue. After war was declared in 1917 the President was carefully protected from would-be assassins disguised as photographers. Any cameraman found near the Chief Executive was thoroughly searched and his camera opened to make sure no weapon was concealed inside.

There had been no announcement that the President would act as Marshal for this parade and luckily for me I was the only photographer present at 59th Street where it started. With the President's permission I got this picture just as they began to march. An advance guard of agents then went ahead to instruct uniformed police to keep all photographers from taking pictures of the President at close range. FIG. 6

LONG BEFORE I BRAVED a squad of secret service agents to photograph President Wilson, I took my first political picture of Alfred E. Smith. Al Smith was my hero and a hero of all the other boys in my block, and when I found him speaking to a small group of voters on a corner near my home, I ran in, got my No. 0 Brownie, and came back to snap his picture. Throughout most of his political career I photographed Al Smith. This flash picture, showing Al in 1932, was taken with a home-made synchronizer at 1/25 second, f8. The precision synchronizers popular today were "just around the corner." FIG. 7





FOLLOW FOOTBALL WITH

BY DON STUART, WITH PAT CANDIDO, WM. C. GREENE AND FRANK MERTA

● GOT YOUR TICKETS FOR SATURDAY'S game? Take pennants and a blanket if the weather's chilly, get a shaggy yellow 'mum for the girl-friend, but don't forget a camera. When a swivel-hipped halfback takes a long pass and races into your viewfinder shaking off two would-be tacklers and stiff-arming a third right at the spot you're focused on, trip the shutter at a thousandth. Just about that time you'll find that you're no grandstand athlete! You'll be *in* the game!

Don't feel slighted if you have to shoot from the stands. Shooting from the sidelines, especially with a Graflex, is apt to get you mixed up in a play without bene-

fit of headgear or shoulder pads (Fig. 2).

Frank Merta of Acme Newspictures tells about the time he ran "sideline interference" for Colgate. "It was on the Old South Field at Columbia University," Frank says, "and I had my eyes buried in the hood of my Graflex, covering a play.

"It was Columbia's ball on my side of the field and their star halfback was tearing toward me like a Kansas twister. I was just set to trip the shutter when something knocked me flat on my back. The play had been run out of bounds!

"I got up and limped around picking up my battered Graflex and scattered plate-holders, while the stands howled.

THE PRESS PHOTOGRAPHERS TELL HOW TO SHOOT FOOTBALL PICTURES FROM STADIUM SEAT OR THE SIDELINES

AN ANALYTICAL SHOT beloved by sports editors and football fans is best taken from a stadium seat. A 13 mm. lens on a miniature camera brings the play right next to your seat in the lower deck. This picture shows a perfectly executed pass play completed a few seconds later by No. 93 (in the white jersey in the center of the group of players on this page). FIG. 1

YOUR CAMERA

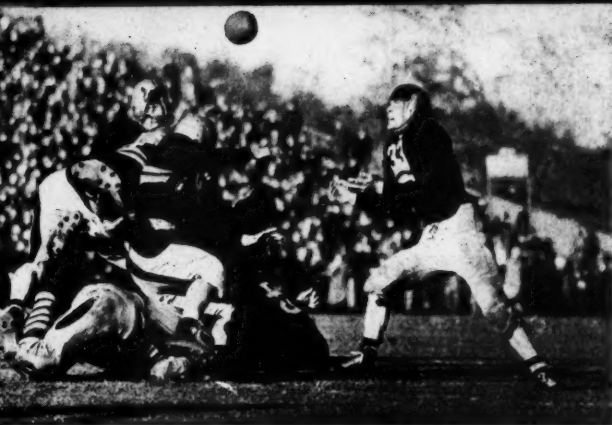
But that didn't last long. The halfback was knocked out. The rest of the team came running over and began to push me around. Then the coach came up and put all the photographers off the field."

A camera with a sports or eye-level finder and a fairly long-focus lens that can be used a safe distance from the out-of-bounds line are the best combination for sideline photography.

Use the fastest shutter speed on your camera. The lowest practical speed for football action is about 1/200; 1/500 is better, and in bright weather 1/1000. In good sunlight Afga Superpan Press or Ultraspeed, duPont Superior 3 and Eastman Super XX films will stand an exposure of 1/1000 at f8. Even in the rain you can shoot at 1/500 at f3.5 with

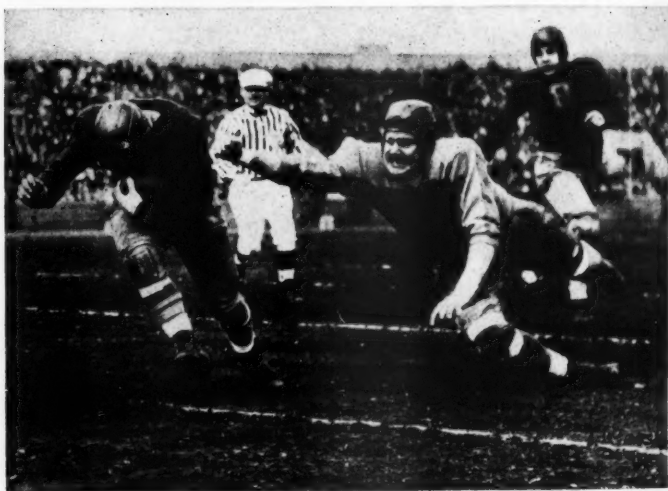


STAND BACK from the sidelines when using a reflex camera to avoid accidents like this that endangered cameraman, camera, and player. FIG. 2



A 12-INCH LENS on a 4x5 Speed Graphic got this "close-up" shot from a safe distance back of the sidelines. An Army back is shown recovering Columbia's fumble. For miniature cameras a 90 mm. lens will get about the same size image. FIG. 3

FOR SNAPPY NEGATIVES on days as dull as when Pat Candido got this shot, lengthen development time about a fourth. The easiest way to get these shots is to focus on a predetermined spot and catch the play as it comes into focus there. FIG. 4



these fast films. Shadow detail isn't important and a good, contrasty "poster" effect is best. Even 200% underexposure will get this kind of picture, so jack up the shutter speed, set the diaphragm accordingly and forget about it. On a sunny day a light yellow filter snaps up contrast and aids in distinguishing the uniforms of opposing teams.

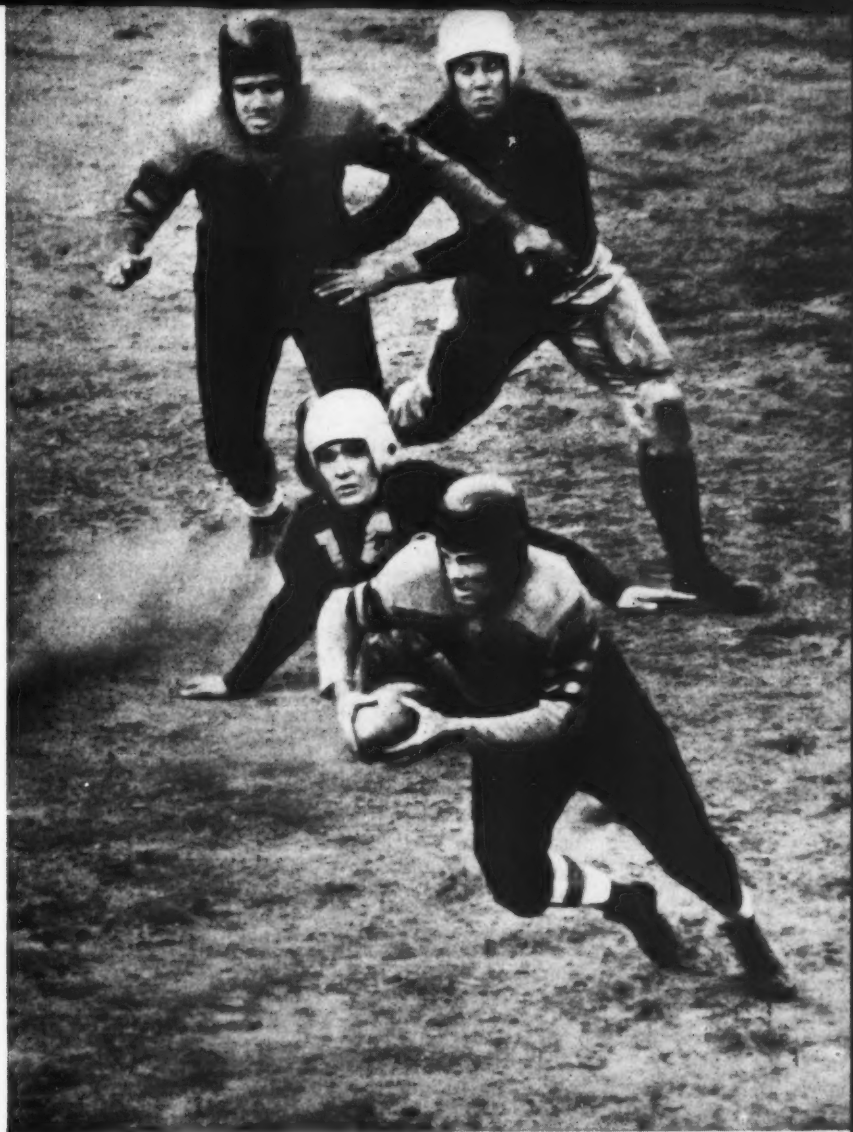
Pat Candido of the *New York News* and William C. Greene of the *World Telegram* generally cover a game from the sidelines, but their method of working applies to football pictures in general:

Pat says: "A shot I made last year at a game in Newark covers a lot of the problems, bad lighting included. This particular shot (Fig. 4) was taken under

pretty much of a handicap. It was a cold day, with a fast-setting murky sun giving off an eerie yellow light. I was using supersensitive ortho film and opened up to $f/4.5$.

"I figured the play would be a line smash and set my Speed Graphic for 20 feet and the shutter at $1/550$. It turned out to be an end run, but my luck held, because it came my way, and just as the runner eluded a tackler I tripped the shutter. The negative was underexposed, but a print on contrasty paper snapped it up a lot."

Greene, who has covered the New York pro teams, says: "For line plays I get just a few yards ahead of the line of scrimmage. The average play gains just



USE A TELEPHOTO LENS from your stadium seat. A 28-inch lens on a "Big Bertha" Graflex got this Acme shot of the back breaking through for a long gain. A 200 mm. telephoto lens on a miniature camera will give the same size image on

35 mm. film. From closer seats a 90 mm. lens produces excellent results. Shoot the players in a broken field for outstanding compositions. Note the defensive and offensive players "waltzing" in the background. FIG. 5

about that much and it's safest to figure for the average. I set my camera for 25 feet and follow the play in the wire finder. If it looks good when it gets about that distance from me, I shoot.

"Bad light in the second half is a tough problem. The best way out is to shoot the play at an angle with a slower shutter speed. Snow and water on the ground reflect a lot of light and help us out in

bad weather. Sometimes we get a great action shot with reflections in the water on the field."

If you use a reflex camera, you can focus on the man who receives the ball from center and follow the entire play in the mirror, using a "running focus," that is keeping the camera constantly in focus and shooting the play whenever it looks right. With a direct viewfinder camera or if you focus slowly with a reflex camera, use the "pre-focus" method that Candido and Greene and most other news photographers use. The yardlines are a big help in judging correct distances to set the focus.

Successful shots depend a lot on anticipating the direction of a *fair share* of the plays, a combination of judgment and luck. If you know football well, you can guess about half of them. If you don't know football, watch the newspaper photographers for the tip-off. They have an uncanny ability to guess what goes on in a quarterback's mind.

For mid-field plays and forward passes, and for all shots from the stands, use a telephoto lens. Merta has a whole battery of "Big Bertha" outfits he uses, depending on the size of the stadium.

"When I'm assigned to cover the Yale Bowl, where the photographer's stand is on top of the stadium, I use a 5x7 "Big Bertha" and a 40-inch lens. At the Yankee Stadium I use a 28-inch lens on the 5x7 outfit. At Columbia's Baker Field a 20-inch lens is long enough."

In terms of a miniature camera, a 300mm. telephoto lens just about matches the longest lens Merta uses. At most fields a 135mm. lens will work fine for these long-distance "close-ups" (Fig 5).

It's necessary to obtain permission if you want to work from the sidelines. This is rather difficult at collegiate games unless you represent a bona fide news agency. At high school games, however, there is little difficulty. And pro teams, who set a high value on publicity, are generally most obliging.

So many amateurs are bringing their cameras to football games that press photographers' associations are planning facilities for them. In some of the smaller college towns, special sections on the football field have been reserved for camera fans. This practice may be adopted at even more schools this autumn.

The stadium offers a candid cameraman as many opportunities as the playing field. During the excitement of the game, spectators lose their inhibitions, and close-ups of their expressions are worth a few shots from anyone's camera. Don't forget the atmosphere shots of cheerleaders tumbling and leaping, co-eds in fur coats with giant 'mums in their collars, the venders of hotdogs and lukewarm coffee, at the half the band with its strutting drum-major, and after the game the snake dance of the victors.

Football is a great game, fun to watch and a lot more fun to follow play by play with a camera.





SHOOT THE SUN! ON A BRIGHT October afternoon, find a spot where the setting sun shines through a cluster of oak leaves, and point the lens right at the light source. The sun's rays streaking through the haze from October's bonfires will make a picture you'll be truly proud of. Don't over-expose for shots like this. Half normal exposure is best to show the "rays."



HOW PROPS CREATE

WRITTEN AND ILLUSTRATED BY JOHN HUTCHINS, A. R. P. S.



THE PROPS. Chenille covers the platform. Netting is fastened with thumbtacks to a frame. The net is about 9 feet from the background to help separation. The inexpensive bedrest is to support the model's back and head. Two 500-watt photoflood lamps concealed behind the platform, light the background.

FIG. 1



THE MODEL takes her place. A single 500-watt spotlight is placed to her left about 9 feet high. Proper nose shadow is decided on and the facial modeling is studied. The hair looks too dark. With only one light source there are dense shadows in the eyes and not enough pick-up of the hair.

FIG. 2



● **THE ILLUSION OF GLAMOR** can be created by suggestion. Even a plain face often can be made to appear glamorous by the effect of surrounding props. Anything used in a portrait is a prop; backgrounds and articles of clothing, for example, are props. Using a single spotlight on a neutral colored background can produce glamorous effects. This light on the background is a useful prop. To gain maximum effectiveness

(Continued to page 26)

TO HIGHLIGHT THE HAIR the model has been lifted higher on the back-rest, and a small Fink-Roselieve Hi-Spot is directed from the right and behind the model to shine through the netting on the hair. Three ten-cent store gardenias are stuck in the net. The secondary light is a 500-watt clear mazda, undiffused and very near the camera's lens.

FIG. 3

Glamour Portraits



CLICK! WE HAVE IT. The model was quite comfortable and we were able to take our time in getting an artistic arrangement of the three ten-cent gardenias. At the last moment we brought in a 500-watt spot on the background behind the gardenias for additional emphasis. The long cast shadows of the eye-lashes are feminine and appealing. Although the hair is dark around the light tones of the face it is fortunately amply highlighted above the forehead.

FIG. 4



WE TRY ANOTHER shot with the model sitting up. The background is overlighted and the gardenias out of focus. This shot was 1 second at $f8$, Fig. 4 was 1 second at $f16$. In the present instance we should have stopped down more. The reclining pose was better for this type of background. The above pose looks a little stiff. FIG. 5

NOW WE ARE USING our platform covered with chenille as in Fig. 1. Our new prop is a beach ball from the five and ten cent store. Observe the spot-light on the background behind the model, here emphasizing the figure. Notice that this background light does not extend down as far

from the props used, whether in the studio or outdoors, choose them carefully.

● THE EMPHASIS AND ARRANGEMENT of dark and light tones on the background is often the most important prop in a glamor shot. Don't be afraid to spot-up the background. Experiment! You can learn this technique only by many trials, and perhaps almost as many failures. Study the fashion and movie magazines for new ideas. Your neighborhood druggist may lend you a nice background from his discarded window display.

Artificial flowers are grand for glamor backgrounds. Natural flowers wither very quickly under hot lights, and are much more difficult to arrange and hold in position. Do not use very small flowers. They clutter up the background and look messy. A few larger flowers are much more practical for every purpose. Get them at the five and ten cent store.

White cardboard columns of many varieties are inexpensive. They are suitable for use behind the body and also can be lightly touched by a model whose hands are unusually attractive.

as the feet. In this shot we have reversed the position of our front lights. The model's fingers are resting lightly on the ball. Models should never clutch their props. Her chin is not resting on the ball. A dent in the ball would ruin this shot. I think a closeup will be nice. FIG. 6



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A NEW PROP (a chenille coat) is added for our close-up. This coat fills up a space at the left of the picture which would be somewhat difficult to light in a bathing suit. Here the emphasis of light on the background is in front of the model. This adds to a feeling of light from the front. It keeps the interest forward in the picture in the direction of the eyes. Notice how the chenille in Figs. 6 and 7 reflects light into the shadow side of the face. FIG. 7

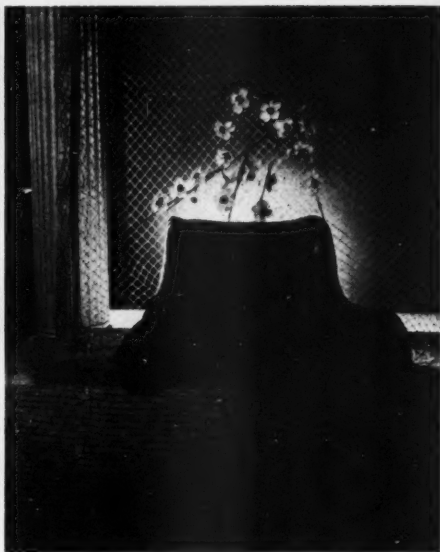
Always make certain that the model who poses for glamor shots is comfortable. Props, such as the bed-rest, used

in the illustrations, and a cushion or two permit the model to relax while the background details are being arranged.



BLACK VELVET and a V-shaped corner of the chenille now cover the platform. A pillow under the chenille elevates the feet. The 12-inch Dagor had too short a focal length for this shot, slightly distorting the feet.

FIG. 8



A SUGGESTED BACKGROUND setting for Minicam Photography fans. A spray of ten-cent store flowers was used against the background. This is a setting I didn't use. It's inexpensive to put together and is yours for the taking.

FIG. 9



GET YOUR OWN MODEL. Here is another suggested background set-up. Remember to stop down to bring both model and flowers into focus. Notice how the lighted netting stands out against the dark background.

FIG. 10



A BAMBOO SCREEN that costs about \$2.00 now covers the platform. This screen is suitable for many other background settings. The flowers used on the background in Figs. 9 and 10 have been made into a bouquet.

FIG. 11



AUTUMN HAZE. MARTIN MUNKACSI renders these delicate gray tones of misty or hazy days by exposing a high-speed orthochromatic film (Agfa Superplena-chrome Press, Eastman Super Ortho Press) at about 1/500 second at f6.3. The ortho-

chromatic film is sensitive to the blue and violet light scattered in the haze, and records the atmospheric effect. The short exposure prevents overexposing lighter parts of the scene. Slightly less than normal development keeps the tone range subtle.

THE STORY BEHIND THE PICTURE

"CITY OF SHADOWS" BY RALPH MORGAN, A.R.P.S.

● AMONG THE MANY times I have snapped the shutter on a camera during the past years, the result obtained in one print, "City Of Shadows," more than makes up for the percentage that were dismal failures.

By that I don't mean that I only obtained one good shot out of hundreds of exposures, but that "City Of Shadows" is a combination of hard labor, both photographically and by the sweat of my brow. And when it met with success I promptly forgot that the picture was originally an accident, and thought instead about the back-breaking labor put forth in getting it.

Perhaps I'd better clear up these contradictory allusions to "luck" and "labor." The first time I shot the picture it was an accident, but then later on I had to work, and work hard to obtain a "retake." When I say that it took me almost a year to get it, well, maybe I'd better explain.

● The discovery of the picture was accidental. My wife and I were riding around one Sunday on a photographic scouting tour. We left the car at some woods that looked promising, and hiking about therein, stumbled on some interesting-looking logs. Without much forethought except a vague idea that there was a picture lurking about the woodpile, I photographed the ends of the logs.

In looking over the strip of negatives later on, that one frame looked promising, so I proofed it. The composition, or something, in that proof was sour, however, so I didn't do anything more about it.

Some time later one of my friends who is bitten as deeply as I by the photographic bug, was wandering around my office and dug out of the debris that strip of film. He was glancing at it idly, and, I might say, upside-down. The position in which he was holding it prompted him to say that there were some very interesting shadows cast by the ends of the logs. Curiosity got the better of us, so we viewed the strip through the projector.

Another of his chance remarks, that the cast shadows looked like the skyline of a city, and I was really interested. The log was such a small part of the 35mm. negative that I realized that I could never blow it up enough to show the fine texture and quality that it should have, so once more I gave it up.

● Six months later—no foolin', it was that long—we were out driving again and chanced again to go by that same spot. I thought about what my friend had said about the shadows looking like the skyline of a city, so I started looking for logs. Believe it or not, the same old log was there, apparently untouched.

That really started me to work. With an old fence rail I pried that log all over the adjacent landscape, but finally decided that I would either have to move the sun or get another light source before I could get the shadows that I wanted. We drove seven miles back to town, borrowed a cross-cut saw, and with the farmer's permission and a crop of blisters on both mine and my wife's hands, sawed off the end of the log, loaded it in the car, and drove back to town. (Page 86, please)

PURE CHANCE PLAYS ITS PART



"CITY OF SHADOWS"

By RALPH MORGAN, A. R. P. S.

★ ENLARGING TECHNIQUE

ARTICLE II: MANIPULATION METHODS

WRITTEN AND ILLUSTRATED BY TRACY DIERS

● AN ENLARGER CAN BE THE most creative instrument in the darkroom, next to the photographer himself. But this is possible only after the technique of turning out snappy straight enlargements from good negatives has been mastered. Then it is time to look for the tricks that make good prints out of negatives that may have excellent subject matter but lack some of the other qualities of a fine negative.

The simplest trick in enlarging is diffusion (Fig. 3). This enables the photographer to hide "unpleasant" realities and annoying details that generally turn up in homemade portraits. Placing a piece of thin silk over the enlarger lens is the simplest method of eliminating tell-tale lines of age, bad disposition, etc., that show up in the portrait shot to the sitter's dismay. The disadvantage of this method is that it increases the exposure.

A supplementary lens that gives a diffused or "soft focus" effect in enlarging can be bought at camera stores for from 70c to \$3.50, depending on the size of the enlarger lens. This fits over the lens, and throws two images on the paper, one sharp, the other diffused (Fig. 3). The degree of diffusion depends on the proportion of total exposure that the diffuser is left in place. For maximum diffusion, leave the diffuser on for the entire exposure. A considerable degree of softening will result if half of the exposure is made with the diffuser and half without. Portraits aren't the only subjects that often look better when diffused; landscapes also may gain in pictorial quality when diffused.

The biggest advantage of enlarging lies in the fact that part of a negative can be made into an interesting picture, with all distracting detail eliminated. This is



TILT THE EASEL to correct or create distortion. FIG. 1A



TOPPLING BUILDING produced by tilting camera FIG. 1B



BUILDING PERSPECTIVE corrected by tilting easel. FIG. 1C

called "cropping." To practice cropping and composition economically, blow up miniature negatives to 3 x 4", using the entire negative in every case. Contact prints from 2¼ x 2¼" and larger negatives can be used. Cut two "L's" out of stiff paper or lightweight cardboard. They can be either white or black. Make each arm about 5" long and 1 to 1½" wide.

Lay the pair of "L's" on the print and move them about, changing the proportion of the area covered and the position on the print. This gives a good chance to see what various sections of each print look like when viewed without the surrounding details. When a likely looking composition is found, score the print with a sharp pencil so that you can refer to this small print when duplicating the arrangement on the enlarging easel.

Old negative files will prove to be a gold mine of compositions, using this method. A single negative may turn out to have three or four dandy compositions in it.

Most amateurs when they start to make enlargements keep the easel borders parallel with the edges of the negative. But after a few tries with the cardboard masks described above, it will be found

that many a dull picture becomes exciting when the rectangle is turned so that the mask borders are not parallel with the edges of the negative. A portrait, for example, made with the subject seated bolt upright can be made to look as though the model were leaning forward or backward (Fig. 5). The same is true of outdoor subjects (Fig. 8). In the second print the lighthouse tower is made a strong diagonal element in the composition.

Another trick is to tilt the easel so that the plane of the paper is no longer parallel with the plane of the negative. Architectural subjects sometimes need this treatment, and it can also be used to make caricature portraits, or to distort other familiar objects by making them appear elongated.

When photographing a tall building with a camera that has no rising front, to include the whole building the camera has to be tilted up. This makes the building appear to be toppling over in the print (Fig. 1, center picture). Tilt the easel in the proper direction and at the proper angle when enlarging such a negative and the error is corrected (Fig. 1, right). The lens of the enlarger must be



DIFFUSION IS easily produced with lens attachment.
FIG. 3A



UNRETOUCHED PORTRAITS often need diffusion.
FIG. 3B



DIFFUSED PORTRAITS may appeal more to the sitter.
FIG. 3C



THE VIGNETTER cut from paper or cardboard, in use. FIG. 4A



VIGNETTED PORTRAIT showing gradual fading off into white. FIG. 4B



STRAIGHT PRINT of the same subject without vignetting. FIG. 4C

stopped down in order to focus both top and bottom sharply at the same time. Focus wide open on the middle of the picture and then stop down enough to sharpen the picture up all over.

Tilting the easel in portrait photography can stretch out a face that is too round or full. About a 5° angle of tilt gives the most flattering effect. By tilting the easel in the other direction, a thin

face can be fattened up to look better.

Sometimes a picture will need more than a return to "normalcy" to give it personality. If the subject matter suggests exaggerating some part, use the tilted easel to do it. Work as the fancy dictates, when this mood hits you in the darkroom; it may mean producing a genuinely comical picture that sets the world laughing.

USING FIST to protect center of print when "burning in". FIG. 5A



STRAIGHT PRINT without "burning in" and without turning easel. FIG. 5B



TURNED EASEL, larger head, and "burned in" corners improve print. FIG. 5C





(Above) SIDE OF BUILDING in this picture prints too dark. FIG. 6A

(Above right) HOLDING BACK this part of picture improves it. FIG. 6B

(Left) COTTON SWAB on fine wire "holds back" small areas. FIG. 7



(Left) LIGHTHOUSE when printed straight is uninteresting. FIG. 8A

(Right) TURNING EASEL adds strength to diagonal composition. FIG. 8B



(Left) ENTIRE NEGATIVE contains too much surrounding detail. FIG. 9A

(Right) CROPPING PICTURE centers attention on building. FIG. 9B

Another trick that is used every day by both professionals and amateurs is "dodging." Dodging is controlling the light rays between the lens and the sensitive paper. Vignetting (Fig. 4), the easiest form of dodging, is usually done on portraits.

Lay a piece of opaque paper on your enlarging table and project a portrait negative on it. Draw an oval on the paper big enough to include the head and shoulders of the sitter, and cut out this oval. The print is made through this oval mask held between the lens and the sensitized paper. Keep the vignette in motion to avoid a harsh outline on the enlargement. The head and shoulders are in the center of the picture with everything else gradually fading off to white paper at the edges. Not every portrait looks well when vignetted; some pictures appear awkward and topheavy when printed this way. But it is a fine trick for delicate, light gray or "high key" pictures.

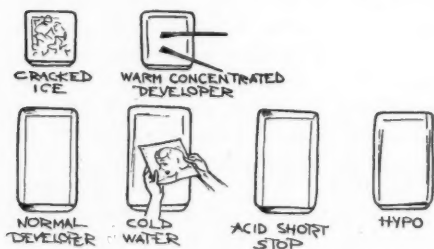
"Burning in" is the reverse of vignetting. Instead of giving a print with the edges fading off to pure white, the edges are darkened, sometimes made almost black. The hand or fist or a specially shaped piece of opaque paper can be used to protect the face of the portrait while letting the edges print longer. Or special masks with a thin metal holder can be

bought at a camera store. If the trick is used a great deal, a set of these dodgers will be a real convenience.

To "burn in" a print, make the normal exposure and then shade the center of the picture so that only the corners are exposed. Move the "dodger" around to avoid sharp outlines. The amount of extra printing time depends on the density of the background in the negative. In most cases 30 to 50% of the first exposure is enough. A rich, dramatic effect is produced by burning in the background until it becomes black (Fig. 5).

Local "spot printing" also goes under the heading of burning in. Certain sections of the picture area may need more exposure than other parts. The local control can be obtained by means of a piece of cardboard with a hole 2" in diameter cut in it. Two fingers are placed in this aperture to control the amount of light and the device is kept in motion above the area to be spot printed.

"Holding back" (Fig. 6) sections of a negative may be needed because they



DODGING AND burning in can also be done during development. The print first goes into the usual developer. After it begins to come up, just enough to show which areas need to be controlled, rinse the print in cold water and apply some undiluted developer to areas to be darkened. Apply ice to cool the paper surface where areas are to be kept light. These applications should be for only about 15 seconds at a time. Then return print to developer for a few seconds and start the control all over again. Prints being manipulated in this way should not be kept exposed to air for more than about 15 seconds at a time or yellow stains may result.

darken too quickly when the rest of the negative receives normal exposure. Either the hands or pieces of cardboard cut to fit the area are used. To hold back a very small area in the center of the negative, put a piece of absorbent cotton on the end of a fine wire and "dodge" with this (Fig. 7). When using any of these methods make test strips first. This will save a great deal of paper.

Combination printing is a trick used to add clouds to bald-headed landscapes, etc. A file of cloud negatives taken under different lighting conditions and showing different cloud formations is worth having if combination printing interests you.

A landscape that is to have clouds printed in should have a simple horizon line. Choose a cloud negative that matches the landscape in lighting and mood. Both negatives should be of about the same contrast.

Make test strips of both negatives to find the correct exposure. Now project the landscape negative on the easel somewhat smaller than it will be. Trace the skyline roughly on a card. Cut the card apart on this line and save both parts. Focus the landscape negative to the correct size and make the exposure. During this exposure hold back the cloudless sky with the sky part of the mask, keeping it in motion.

At the edges of the paper mark the top of the print and indicate where the horizon is. Take the paper out of the easel. Focus the cloud negative so that it fills the proper area and then place the paper back in the easel being certain that the clouds will print on the top section. While exposing the clouds, hold back the landscape with the other piece of the card. The developed print should have a perfect cloud-filled sky. If the horizon line has a streak of light the blending was not good and the print should be made over again. The knack of combining negatives so the "joints" don't show, takes practice.

These enlarging tricks can help you create pictures as you enlarge.

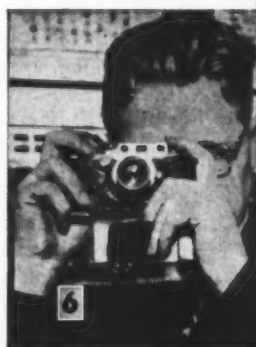
WHAT'S WRONG IN THESE PICTURES ? ? ?

- (1) The photographer is shooting on the run, a good way to get a blurred or out of focus picture. Stand still and let the subjects do the moving.
- (2) Collapsible lens barrel has not been pulled out into correct position. The negative will be out of focus.
- (3) Too close to the subject. However, the photographer is correct in compensating for parallax by shooting above the head of the subject.
- (4) His finger covers one of the range finder windows, preventing focusing.
- (5) He forgot to remove lens cap.
- (6) The camera is pointed directly into the sun, as can be seen from the reflection on the lens. Negatives will be fogged.
- (7) Camera case flap is in front of lens, blocking out part of scene.
- (8) Camera is held in the finger tips, greatly increasing chances for "camera shakes" and a blurred picture. The camera is tipped and will produce slanting horizon line or weird perspective.



THESE PHOTOGRAPHS SHOW WHAT A PHOTOGRAPHER LOOKS LIKE WHEN MAKING SOME COMMON MISTAKES IN CAMERA HANDLING. SEE IF YOU CAN SPOT THE CAMERA-MAN'S ERRORS BEFORE READING THE ABOVE LIST OF ANSWERS.

By Victor H. Wasson



HOW TO RECOGNIZE
AND UTILIZE SOME
FAMILIAR MISCONCEPTIONS

FOTO -

Fallacy: That fogged film is ruined.

● **FOGGED OR LIGHTSTRUCK** film is not always necessarily ruined. If the fogging exposure is brief enough and uniform over the entire film, the result will be increased emulsion speed! There is an aerial camera that is painted white inside, so the slight fogging action of scattered light can speed up the film!

Prefogging, as this action is called, increases the effective speed of film by overcoming the inertia of the emulsion. A small amount of the light from the subject acts on the film but does not produce a developable image. It serves only to get the emulsion started. Normally, a portion of the exposure-light is thus consumed. By prefogging the film, an initial "push" is provided, and all of the actual picture-making exposure becomes available for producing an image. The film is, therefore, effectively faster.

You can experiment with prefogging as follows: Cover the camera lens with a handkerchief or piece of typewriter paper. Have the diaphragm set at a fairly wide aperture. Point the camera toward an electric lamp, the sky, a pocket flashlight



TAKEN IN DIM LIGHT at identical exposures with and without pre-fogging. The print (right) from the pre-fogged negative has slightly better shadow detail.

or other light source (not directly into the sun). Give the film a very short exposure, say 1/100 second, when you are aiming at a 100-watt lamp 20 feet away. It will be necessary to experiment to find the best prefogging exposure as it depends on the emulsion speed and other characteristics of the film being used.

Then reset the shutter without moving the film, and take the picture.

Fallacy: That you have to plug the keyhole in a darkroom door.

● **MANY PHOTOGRAPHERS** worry unduly because the keyhole, or the crack around the door, or the place where the wall ought to touch the floor but doesn't, might let in some light. It is perfectly logical to make a darkroom as light-tight as possible, but it is unnecessary to go to extremes. Even with modern high-speed films, a low level of stray white light inside the darkroom need not cause trouble. For example, there is a

certain basement darkroom whose walls begin about 1½" above the floor. The resulting crack, which assures ventilation, lets in a wee bit of light when the basement lamps outside it are burning; but thousands of cut films and rolls have been handled in that darkroom without fogging, simply because the light stays down near the floor and a film is rarely dropped on the floor!

The best insurance against fogging is

FALLACIES

to make a test by exposing part of a fresh film on the work table for a few minutes, and then developing it. Cover part of the film with a coin, key or other opaque object so you can tell whether the fog comes

from exposure or development. Always suspect your safelight lamps, if you do get fog, for they rather than the keyhole may cause it.

Fallacy: That there is only one correct exposure for each picture.

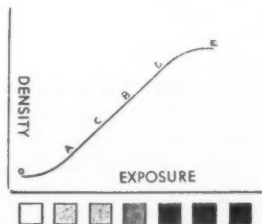
● IT WOULD BE A GLOOMY DAY for photographers of every sort if photographic emulsions did not possess a quality known as latitude. The emulsion is a sensitized coating on a piece of film, plate or sheet of photographic paper.

Happily, there is a certain amount of picture-saving latitude in every kind of sensitized material. It is greater in most films used for negative making than in some of the other materials such as color film. This latitude enables bunglers (and even experts) to obtain satisfactory pictures when their exposure calculations or camera shutters are a bit haywire.

If you select a certain subject, and make a series of pictures of it at increasing exposures, say doubling the length of exposure each time, you will find something that may be surprising: Some of the very short exposures will give poor negatives that look very much alike. Some of the very long exposures will give equally poor negatives, though much denser, that likewise don't vary much among themselves. However, through the middle range you will find that there are several negatives from which, by varying the grade of printing paper a bit, you can obtain good, almost identical positives. That is, all these "middle range" negatives are correctly exposed, although the exposure for each was different.

Mathematically inclined photographers plot these results on paper and obtain the

characteristic or H & D curve of the photographic emulsion. The curve looks somewhat like the letter S with a perfectly straight, sloping section between the curved ends. When the exposure is such that the range of tones in the negative, from lightest to darkest, falls on the straight line of the curve, a correctly exposed negative results. The opacity (quality of being opaque) of the negative is directly proportional to the exposure given. But when the exposure is too little or too much, the resulting opacity is not



CURVE showing relation between logarithm of exposure and density.

in proportion to the exposure, and a good print cannot be made.

Skillful photographers can, by regulating their exposure within the limits of the straight-line part of the H & D curve, obtain either thin or dense negatives as desired, without upsetting the relation between exposure and opacity.

HOW TO TAKE GOOD PICTURES

Speed—with a gracious nod to Mr. Einstein—is all relative. A few pointers on the matter of shooting more or less swiftly moving subjects.

PHOTOGRAPHY USED TO BE A serene pastime, beloved of slightly frustrated gentry who couldn't quite make the grade as etchers or water-colorists. Their taste in pictures ran to variations on The Old Mill Stream theme.

But now look at photography! The camera totter whose camera can't split a second into 500 or 1000 parts—and take a picture in any one of them—feels like an orphan of the storm, a miserable outcast. The really hot camera boys go in for speeds that sound astronomical; they display portraits of a bullet passing through a plate of glass, or a golf ball at the instant of impact with a heftily swung driver. It's all very, very speedy.

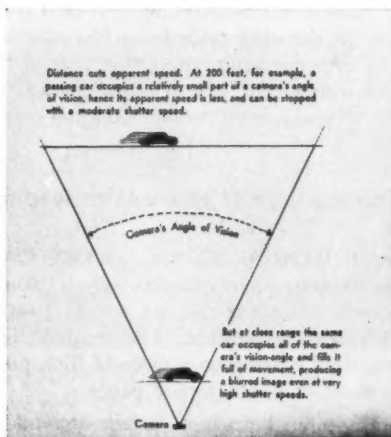
So what? For most of us, photography of that sort is about as useless as highway speeds of 200 miles an hour. It is interesting to read about or to watch, but it simply doesn't have any place in our routine.

As a matter of plain fact, a camera capable of snapping off 1/50 second will handle the bulk of action shots, and do it very nicely, too, thank you. It depends a little on how the camera is handled, but that's a trick easily mastered. If your camera has a shutter that speeds up to 1/100, 1/200, and 1/500, that's dandy, but don't get delusions of grandeur; if it speeds on up to 1/1000, that's super-dandy, but if you use your top speeds



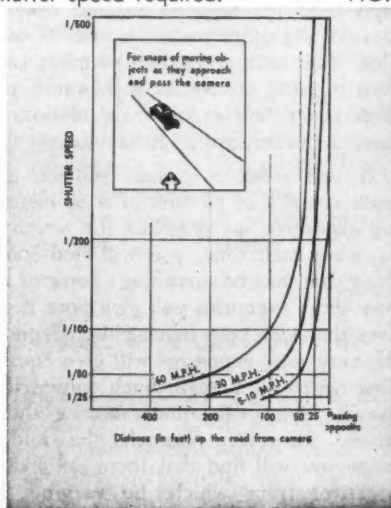
AT 60 M.P.H. (miles per hour) the moving subject requires a shutter speed of 1/50 second when 200 feet away, 1/100 at 100 feet, 1/200 at 50 feet, etc.

FIG. 2



THE CLOSER the subject, the greater the shutter speed required.

FIG. 1



● SPEEDY SUBJECTS

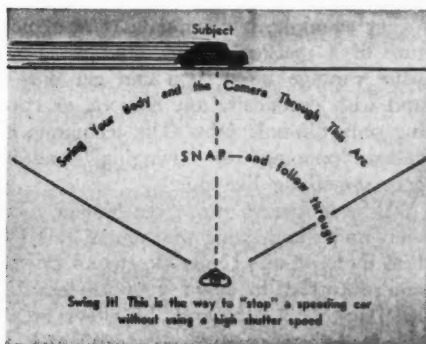
more than once in a very blue moon, you're either spending your time at a riot or you're doing things the hard way.

Speed, like a mother-in-law, is all relative. We have no intention, here, of going into our famous four-volume condensed version of the Einstein theory, but there are some things it's important to remember about speed if you're going to make any good pictures of action.

● Consider an automobile moving along a highway at the rate of 60 miles an hour:

THE FOUR SITUATIONS

1. It's doing 60 only so far as the car, the road itself and the hitch hikers along it are concerned.
2. To someone in another car, following along at the same speed, it is moving at *no* miles an hour.
3. To someone, coming in the opposite direction at 60 m.p.h., it's really doing a giddy 120 m.p.h.
4. And to somebody who comes along in the same direction and passes it, doing a breezy 70, our car is moving backwards.



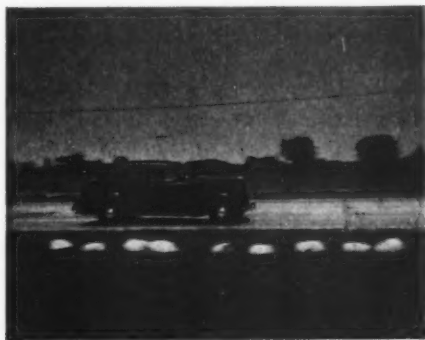
→
PANNING the camera will stop swiftly passing action at ridiculously slow shutter speeds. This car was doing 50 miles per hour, yet was "stopped" at 1/30 second! Note that the car is sharp but the background blurred. See above diagram. FIG. 5



THIS is the easiest angle for snapping speeding subjects. Taken at 100 feet, 1/50 second. FIG. 3



BLUR usually results from shooting at right angles to a subject unless it is moving quite slowly. A shutter speed of 1/200 second was not fast enough to stop this car. FIG. 4



NEEDN'T 'FAZE' YOU

Very well, with these profundities established, let's consider the photographic problems and opportunities of each of these situations.

If we are the hitch hikers mentioned in instance #1, how do we go about picturing that galloping jalopy? For the sake of generality, let's assume that our camera offers (as many do) a choice of these speeds— $1/25$, $1/50$, $1/100$, and $1/200$. The first thing we have to decide is the kind of picture we want. We can get a shot of the car as it comes nicely into range, about 200 feet away; we can snap it as it bears down on us or we can try to catch it as it flashes past. We can stand on the highway shoulder or safely back a few yards.

- The graph, Fig. 2, is based on a camera position safely back from the highway. Take a look at the line marked "60 m.p.h." It shows, first of all, that the nearer the car approaches, the more shutter speed you need to stop it. At the passing point, when the car is cutting at right angles directly across the axis of the camera, our graph line zooms up far past the $1/500$ shutter speed line. The other day we tried to "stop" a car in this position with a shutter speed of $1/1000$. No soap. Probably something closer to $1/2000$ would do the trick, but there's no percentage in that.

However, when you turn to shoot up the road toward the on-coming car, you move into more reasonable photographic territory. With the car only 50 feet away, a shutter speed of $1/200$ will take care of the situation nicely; at twice that distance you can double the time. And when the car is still 200 feet away, you can use an ordinary snapshot shutter speed with perfect safety.

As the graph shows, much the same situation maintains when you're dealing with a car ambling along at 30, or even when picturing kids on bikes. When your subjects are relatively slow-moving, it becomes easily possible to shoot at right angles to their path but—why try? It is

fairly obvious that a picture of passing action, a profile of action, as it were, is less interesting than a picture of approaching action. In the profile shot you get nothing but the immediate foreground and the subject; in the quartering shot you get enough of the surroundings to give your picture depth and the illusion of reality. You can pay some attention to composition and arrangement, and you can use a shutter speed slow enough to permit of stopping down the lens a little, with resulting benefits in sharpness and depth of field.

- In general, therefore, there is no reason for bewailing your lack of high shutter speeds. They're nice to have around for emergencies, but they certainly do not come under the head of necessities. And I have a theory that the camera user who understands how to use a simple camera, with limited speeds, will emerge with better, more interesting pictures than the lad who relies more on machinery and less on his head.

For example, if you really want a picture of a speeder passing directly across your vantage point, you can get one—and with practically any camera, excepting only pin-hole jobs. The technique is called "panning" or "swinging," and it goes something like this:—

As your speeder nears, get him in your view-finder and swing the camera to keep him there. As he comes closer and closer, you're forced to pivot your camera to keep up with him, and the closer he is the faster you need to pivot. When he's directly opposite you, snap the shutter, but *don't stop there*. Keep on swinging. The technique is very much like that of a golf swing; it has to be smooth, its top speed is at the moment of impact (snapping the shutter), and the follow-through is very important.

Try it out with an empty camera before you start burning up film. It's not at all difficult, but there is a little trick to it, and a few practice swings will save you money and disappointment. The theory, of course, is analogous to that of

our #2 situation. (See "The Four Situations," page 41.) Camera and subject are moving together, at something like the same speed, so high shutter speed is not needed.

- Consider the #2 situation a bit longer. If you shoot a car directly ahead of yours, moving at the same rate of speed, an ordinary snap speed will be quite adequate as far as picturing the other car is concerned. But the ground and the surrounding landscape will, relatively, be in motion, so you'll get a few signs of action there, particularly toward the sides of your picture.

If you catch up with the car ahead, and run along abreast of it for a while, you can snap it at ordinary speed; again however, the background will be moving swiftly in relation to your camera and will doubtless be very nicely blurred. One of the best airplane shots we've ever seen was made from another plane, flying alongside the pictured one. There being no immediate background to go blurry, everything in the picture is beautifully sharp. This masterpiece was made with a box Brownie.

Situations #3 and #4 need no particular elaboration. For #3 you need a good deal of shutter speed; for #4 very

moderate speed will suffice.

Almost as important as camera angle, in this matter of shooting speed, is distance. This is particularly true when you're shooting something moving at right angles across your camera's line of fire. Fig. 1, attempts to clarify this point. At close range, the field of your lens is only a few feet wide; anything moving at considerable speed will go from one side of that field to the other in very little time, hence maximum shutter speed is necessary to get any detail in the picture. At a distance, however, the field of your lens is wide—the greater the distance the wider. And a speeding car will traverse a relatively small portion of that field during the exposure; hence it can be stopped with a moderate shutter speed.

- So far, we've been talking almost exclusively about making pictures of straight-line action—cars, trains, runners, and such. It happens that there are other types of action.

Consider somebody in a swing. (It's usually a pleasure.) If the swing is swinging, you naturally want to get a picture that will convey that motion. Oddly enough, that is the type of picture it's easiest to make with an ordinary camera. For the two most pictorial instants during

(Page 85, please)



SWINGING swings are moving fast when the ropes are straight up and down. An ordinary snap of that instant isn't fast enough. Note the blur. This snapshot and the next one, both were taken at 1/100 second.

FIG. 6



CATCHING the swing at the peak of its motion permits use of slower shutter speed. Also, a better impression of action is given. When in doubt, use a faster rather than slower shutter speed.

FIG. 7

LIGHTING METHOD FOR

BY HENRY CLAY GIPSON — ILLUSTRATED BY THE AUTHOR

● **WE HUMANS** are our own favorite subjects. It is not surprising, therefore, that everyone turns naturally to portraiture. There was a time, not so long ago, when portrait photography was the exclusive province of specialized professionals, but with modern improved methods and materials, anyone can take good portraits.

First, let's have a sidelong glance at some of the basic rules governing the use

of light. Too many of us are prone to consider light merely as a sort of necessary nuisance incidental to the actual work of photography. We are apt to get so engrossed in actual subject matter that little attention is left for the arrangement and pattern of our lights, despite the fact that it is just this studied use of light that lifts a picture above the level of an undistinguished snapshot.

Light is more than an unwinking



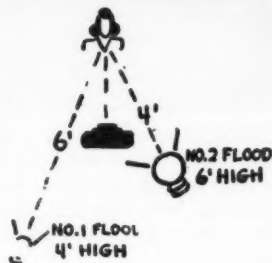
THE SIMPLEST lighting arrangement imitates sunlight, using a single lamp at a 45 degree angle to the subject.

FIG. 1



TO ILLUMINATE the shadow side of the face, a second light is added.

FIG 2

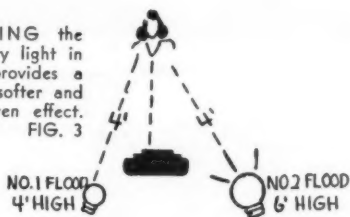


YOUR HOME PORTRAITS

dazzle. It is a tool possessing very definite characteristics which must be understood to be properly utilized. First, bear in mind that a light bulb radiates its intensity in all directions and would just as soon shine into your camera lens as on the subject.

A list of nine simple rules are given at the end of this article, but first let's consider some simple lighting arrangements that can be duplicated with two lights in any living room.

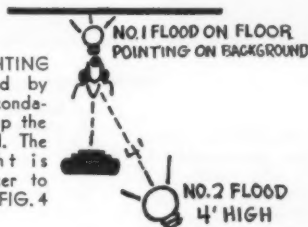
BRINGING the secondary light in closer provides a slightly softer and more even effect. FIG. 3



● The Forty-five Degree Light (Fig. 1) is the simplest of all basic set-ups. Most closely approximating outdoor lighting, it produces excellent likenesses, gives a rounded, three-dimensional effect and is flattering to most types of subjects. Either a light or dark background may be used. This shot is best taken full face or with only the slightest tilt of the head.

Note that the right side of the face is well lighted while the left is in partial shadow. A triangular patch of light ap-

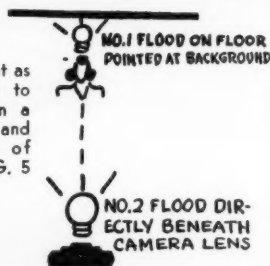
FRONT LIGHTING is achieved by using the secondary to light up the background. The main light is brought closer to the camera. FIG. 4





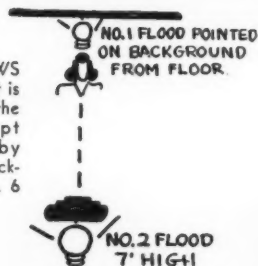
PLACING the light as close as possible to the lens results in a "high key" effect and entire absence of shadows.

FIG. 5



SHORT SHADOWS result when the light is raised. Note that the background is kept light in tone, by means of the background light.

FIG. 6



appears on the left side where the light passed the nose. This patch of light should be just below the left eye and include part of it, going down to the cheek. Make slight adjustments in the lamp height and the tilt angle until the effect is achieved, since it is the determining means of getting the proper lighting angle.

The actual working procedure involved in Fig. 1 may be used as a general guide in all operations of this nature.

First, we place a chair for the subject, and get the camera into position at a distance of about 3 or 4 feet for a head and shoulders shot. Make the preliminary focus using the back of the chair or a

piece of newspaper. Note that there is enough background to show above the subject's head.

Next, place the main light as shown in Fig. 1, behind the camera and to the right. Raise the lamp to a height of about six feet and aim it downward.

After all these preliminaries have been taken care of—and not before—ask the subject to sit down and face the camera.

● Fig. 1 has shown what can be done with a single light. In a room which is large or dark, the shadow side of the face will tend to be lacking in detail. To illuminate this side of the face, a secondary light is used as in Fig. 2. The secondary light should be either smaller or

farther from the subject than the main light.

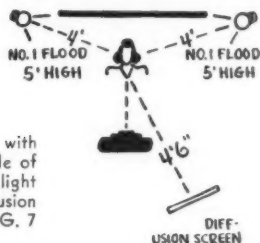
In the diagrams shown here, a large floodlamp (a No. 2) is indicated as the main or primary light source and a smaller (No. 1) flood as the secondary. One size of lamp can be used for both purposes, if desired, simply by keeping the secondary light at a greater distance than the main light.

To check the secondary light, turn off the main light. The secondary should give even illumination and should throw no shadow on the face or below the chin.

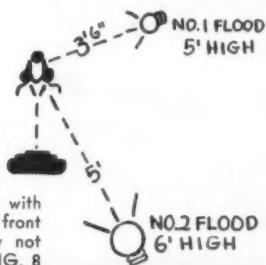
Note, finally, the subject's eyes. When both lights are on there should be a tiny pinpoint of light on each eyeball. These are the catchlights, very important to give

the face life. There should be but one showing in each eye. Make slight readjustments in both lights to get the proper catchlight effect. This done, check your focus. Don't stop down your lens too much. Focus on the eyes. This will produce a slight softening and roundness to the head lines, very pleasing in portraiture. Make sure that none of the lamps show within the picture area and that no light is being cast back into the lens.

● In front lighting (Fig. 4) the main light is used in front of the subject while the secondary light illuminates the background. A great variety of effects may be had simply by changing the distance of a single light.



SIDELIGHTING with floods on either side of the face. The main light is behind the "diffusion screen." FIG. 7

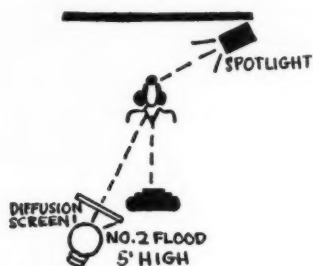


SIDELIGHTING with a single flood. The front light may or may not be diffused. FIG. 8



For example, in Fig. 5, the light is placed *between* the camera and the subject, producing light skin tones and a contour or dark line about the head. This type of lighting is used for high-key effects. In Fig. 6, the light also is placed close to the camera, but behind it. The light may be either above or below. Note that the background tone is kept light.

- Side lighting (Fig. 7) produces a line of light at one or both sides of the head, thereby setting it off from the background. It is never used alone, otherwise the effect would be that of silhouette. It



HALO lighting is obtained with a soft frontal light and a spotlight in the background to point up the hair. FIG. 9

is generally used in conjunction with a front light, which may be diffused, but may also be used with any other set-up to provide a light accent.

A diffusion screen, to diffuse the main light, helps assure that there will be sufficient contrast with the back light. A square of light cheesecloth can provide an improvised diffusion screen in front of the light. **WARNING:** make sure the diffuser is at an adequate distance from the light to avoid its catching fire from the heat of the flood lamp.

The back light is next set up, using two lights paced as in Fig. 7 or one light as in Fig. 8. Arrange them to illuminate the side of the subject without shining directly into the camera lens.

- Halo lighting (Fig. 9) uses soft frontal illumination with a background spot to

UNCONVENTIONAL lighting is used for dramatic effects, for character studies, forceful types, or other unusual subjects. It is seldom appropriate for pleasant models like this one. FIG. 10



light up the hair for the halo effect. At one time it was much favored by Hollywood photographers. It is best with feminine subjects who have very beautiful or elaborately coiffured hair.

Since the halo effect is the center of attention, frontal light must be very even. Set up the main light close to the camera. An auxiliary unit may be used on the other side. Guard against shadows on the subject's face.

The spotlight is placed behind the subject and quite close so that there will be a sharp line about the head. The subject should be about five feet in front of the background and about two feet from the spotlight, which must be so placed that it is not visible from the camera position. It is advisable to diffuse the front lights so that they do not drown out the sharp halo effect. Guard, too, against "halo" effect in your lens from the spot beam.

● **Dramatic Lighting (Fig. 10).** Thus far we have been discussing carefully balanced lighting. We come now to unbalanced lighting, also known as dramatic or dynamic lighting. It is effective for character and costume studies, pictures of forceful people, and various trick effects.

The up-lighting produces an odd and rather terrifying effect, but it may be controlled by moving the light slightly to one side or the other so that heavy shadows are formed. Diffused, this light is used for those cheerful "fireside" type of pictures. A lamp in a reflector placed in a fireplace can give an astonishingly realistic firelight effect.

From even the brief descriptions we have given of the various lighting set-ups it should be apparent that portraiture allows an enormous margin for experimentation by the amateur. In practically all cases, it is advisable to start from one or the other of the conventional set-ups and then proceed to vary by shifting light position or distance. Start always with the main light and, if you think you are in trouble, don't try to tinker your way out of it but return instead to the main light once more.

● Following are some simple rules which will do much to remove the kinks from your portrait shots:

1. All portrait lighting divides into a comparatively small number of basic setups. Once these are learned and understood a great many variations of the basic setups are possible.

2. Slight modifications in lamp distance or position can produce considerable variations in effect without, however, altering the basic nature of the setup.

3. In any light setup involving two or more light sources, there are always primary and secondary lights. To determine the basic setup, note the position of the primary or main light. The function of secondary lights is only to produce special accents.

4. When following a setup or when evolving one of your own, get the primary light in position first. Thereafter add secondary lights as they are needed. If it becomes advisable to shift the position of the primary light, turn off all secondary lights and start over again.

5. Lamp and camera distances in setup plans should be used only for general guidance and to indicate the **RELATIVE** positions of the various units. Factors such as the height of subject, the intensity of the lamps and the focal length of your camera lens may compel modifications of the given specifications without, however, changing the ultimate pictorial effect.

6. Work as close to your subject as circumstances will permit, but not closer than three or four feet or distorted perspective will ensue. In enlarging, use only part of the negative, omitting extraneous details.

7. Male subjects are best shown with simple, rugged, contrasty lighting, while feminine subjects appear at their best with more delicate handling. Fair-haired and fair-skinned subjects lend themselves better to special lighting effects than do dark ones.

8. Note, finally, that in the lighting plans shown we have had occasion here and there to show modifications of the basic set up when these produce radically modified effects. These, it should be remembered, are offered not as new plans but rather as suggestions for working out other variations of your own along the suggested lines.

9. Exposure will vary with conditions. Follow the recommendations of the lamp manufacturer in the circular given with Photoflood or Superflood lamps. If an exposure meter is used, take the reading at a 1-foot distance from the subject's face.



**"EARN WHILE YOU LEARN"
TAKING PICTURES OF
COLLEGE STUDENTS AT
WORK AND PLAY**

THE COLLEGE YEARBOOK, Alumni Quarterly, and College Bulletins are markets for pictures of pretty co-eds in romantic ivy-walled campus settings. FIG. 1

CAMERA EARNS WAY

• • • • FOUR "SILVER-BROMIDE" GOLD MINES

BY GILBERT RAE—ILLUSTRATED BY THE AUTHOR

● **THE GREATEST PHOTOGRAPHIC** Contest of all time is now open. There are nearly a thousand first prizes, each consisting of a four-year university education, all expenses paid! Anybody eligible for college may enter, and there is *no closing date*. Fantastic? Not at all!

For years colleges and universities in the United States—including almost a thousand of the important schools—have sent out bulletins to prospective students. Some of them hire an official photographer to picture the ivy-clad walls, the pretty co-eds, the handsome athletes, and the brand-new chem lab or engineering

building. Make that your job and it will pay for your college education!

Pick out a good school that still sends out a bulletin strong on words and weak on pictures, and get set to do a classy job of selling. Make up samples of the best story-telling photographs you have taken. Two dozen 8x10" prints, good rich prints with punchy subject matter, will help put the idea across. If the school is nearby, shoot a roll or two around the campus and show prints of the best of these shots, too.

To make your proposition all the more attractive, detail the advantages to the



ROUGH AND TUMBLE FIGHTS between Freshmen and Sophomores in the Annual "Flag Rush," or some other traditional excuse to roll in the mud, sell better among the students themselves than to the College publications. The Yearbook or Humor Magazine may use one, if offered free of charge. FIG. 2

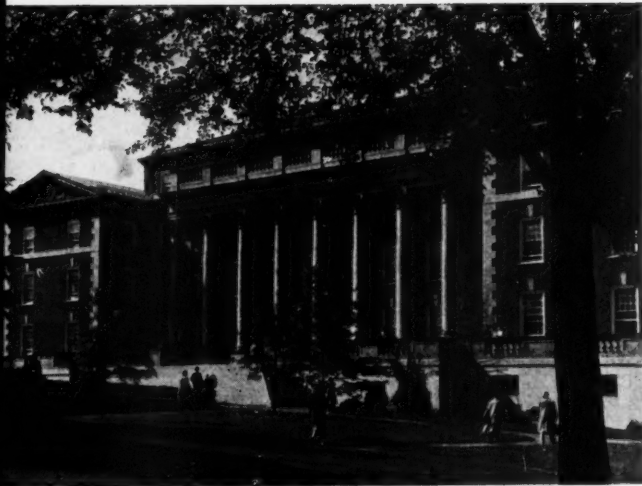
THROUGH COLLEGE

school in having an official school photographer. An official photographer is always ready to take photographic assignments on short notice. Pictures taken from the viewpoint of a student are more appealing to prospective students than run-of-the-darkroom commercial shots. And news photos of campus life in State dailies swell the enrollment and make "Alumni day" drives easier. (Figs. 2, 6, and 7).

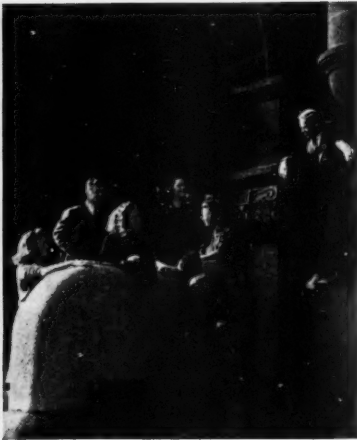
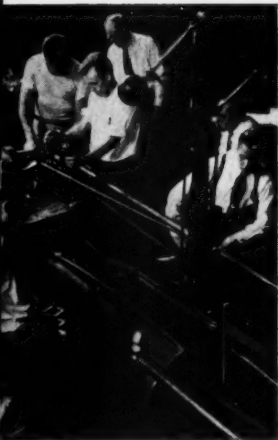
This service is worth at least free tuition to any school; that means about three or four hundred dollars a term. A large school that puts out a yearly book of a hundred pictures should do even

better by a staff photographer. I went to Syracuse University with a Contax and a five-dollar bill and was paid tuition plus a fair living wage for four years. The work averaged about two hours a day.

● THERE ARE FOUR SILVER-BROMIDE "Gold Mines" on every college campus. The richest and deepest is direct connection with the department that makes up the school Bulletins. But if somebody else has staked out that claim, don't let it defeat you. An energetic prospector can dig his college expenses out of three other mines that are open to everybody.



WELL-COMPOSED pictures of scenic spots on the campus and pictorial views of the buildings are also used to illustrate Bulletins and Year-books. FIG. 3



CLASSROOM SCENES (left) and groups of students (right) in an attractive campus or fraternity house setting can be sold to the models. FIG. 4



TWENTY COPIES of this flash shot of students at a dance were bought. Pictures that sell that many copies more than make up for the shots that "nobody wanted." FIG. 5



PUBLICITY ASSIGNMENTS for the Official School Photographer net free passes to important campus events, among them the Varsity football games on Saturday afternoons. This arrangement permits the lucky student to mingle with the Press Photographers and get his own sideline close-ups, as in this shot of a player scrambling to recover a fumble. FIG. 6

● **GOLD MINE No. 2 IS TO SELL** the students the pictures they want. Most lucrative are flash shots of dances and other night life, selling many prints from one negative. The shot of students standing during intermission at a dance (Fig. 5), sold about twenty copies, which is more than the number of persons in the picture.

Some students, especially Freshmen, buy well-composed shots of buildings on campus, (Fig. 3) fraternity houses, classroom scenes or photos of themselves in a group of students Who Really Matter Around The Campus (Fig. 4). It doesn't take many 8x10's at a dollar each to make a day's wages. Another source of steady income is fraternity and sorority group photographs. Each society needs a new shot each year to immortalize the pledges, and you sell the pledges copies to send home to "Dad." Teams in intra-

mural athletics are another potential market for action pictures if you are a high-powered salesman.

Almost every college holds beauty contests. Although the girl's portraits and (Page 89, please)



MUSIC STUDENTS putting on a radio broadcast make a good subject for three markets: to the local newspaper, to national picture magazines with a story-telling caption, and to the students themselves. FIG. 7

CHEMICALS USED IN PHOTOGRAPHY

The following is a partial list of the commoner photographic chemicals, together with their more familiar uses:

Name	Common Use in Photography	Name	Common Use in Photography
Acetic acid —Used in short-stop bath to stop development, and in fixing baths as an acidifier for similar purpose. Neutralizes sodium carbonate and other alkalis. $[\text{CH}_3\text{COOH}]$		Potassium bromide —Restrainer in developer, preventing fog. $[\text{K Br.}]$	
Alum, chrome —Hardening agent for gelatin. Used in separate solution or in fixing bath.		Potassium ferricyanide —Used with hypo for reducing negatives and prints (Farmer's reducer). Do not confuse with the ferrocyanide. $[\text{K}_3\text{Fe}(\text{CN})_6]$	
Alum, potassium —Hardening and clearing agent in hypo fixing bath. $[\text{K}_2\text{Al}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O.}]$		Potassium hydroxide —Strong alkali used as accelerator in very vigorous developers for working at great speed or building up maximum density and contrast. $[\text{KOH.}]$	
Amidol —Developing agent used without alkali. Excellent for tropical conditions, and for producing good blacks on bromide and chlorobromide enlarging papers. $[\text{C}_6\text{H}_5(\text{OH})(\text{NH}_2)_2\text{HCl}(1, 2, 4).]$		Potassium metabisulphite —Acidifier in hypo fixing baths. Used in some developers as preservative. $[\text{K}_2\text{S}_2\text{O}_5.]$	
Borax —Weak alkali used as accelerator in fine-grain developers. $[\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O.}]$		Potassium permanganate —Used for eliminating hypo and testing for presence of hypo in wash water. In combination with acids, used for removing stains, cleaning trays and glassware, and reducing silver images in negatives or prints. $[\text{K Mn O}_4.]$	
Citric acid —Used in place of acetic acid in acid fixing baths, and for clearing negatives by removing scum, etc. $[(\text{CH}_2\text{COOH})_2\text{C}(\text{OH})\text{COOH.}]$		Silver nitrate —Used as source of silver in sensitizing emulsions, in hypersensitizing, and in physical development and intensification. $[\text{Ag NO}_3.]$	
Copper sulphate —Used in bleaching baths for toning and intensification processes, and in making bromoil prints. $[\text{Cu SO}_4 \cdot 5\text{H}_2\text{O.}]$		Sodium Bisulphite —Acidifier in fixing baths $[\text{Na H SO}_3(\text{Na}_2\text{S}_2\text{O}_5).]$	
Glycerine —Solution with water, used to treat prints so they have less tendency to curl.		Sodium carbonate (anhydrous) —Commonest alkali used in developers to swell gelatin and accelerate development. $[\text{Na}_2\text{CO}_3.]$	
Glycin —Slow developing agent, giving fine grain and soft, delicate detail. Often used in conjunction with paraphenylene-diamine. $[\text{C}_6\text{H}_4(\text{OH})(\text{NH}_2\text{CH}_2\text{COOH}).]$		Sodium hydroxide —Strong alkali used as accelerator in vigorous developers. Somewhat weaker than potassium hydroxide. $[\text{Na OH.}]$	
Hydroquinone —One of commonest developing agents for reducing silver salt to metallic silver. Produces contrast. Usually used with metol. $[\text{C}_6\text{H}_4(\text{OH})_2(1, 4).]$		Sodium phosphate —(a) Neutral phosphate. Used as an accelerator, and as an ingredient in the gold-toning process. (b) Tri-basic phosphate. This is used as an accelerator in developers, and is notably clean-working. $[\text{Na}_3\text{PO}_4 \cdot 12\text{H}_2\text{O.}]$ (c) Acid phosphate. Not important to photographers.	
Hypo (sodium thiosulphate) —Solvent for unreduced (undeveloped) silver. Also dissolves metallic silver, especially in presence of potassium ferricyanide. $[\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O.}]$		Sodium sulphide (crystal) —Distinguish this from the sulphite and sulphate. The sulphide is used to treat bleached prints in sulphide toning. [Caution: keep sulphide away from sensitized film and paper, because the fumes, hydrogen sulphide—which smells like rotten eggs—are injurious to silver salts.] $[\text{Na}_2\text{S} \cdot 9\text{H}_2\text{O.}]$	
Metol (Elon, Pictol, etc.) —One of commonest developing agents for reducing silver salt to metallic silver. Produces detail. Usually used with Hydroquinone. $[\text{C}_6\text{H}_4(\text{OH})(\text{NHC H}_3) \cdot \frac{1}{2}\text{H}_2\text{SO}_4(1, 4).]$		Sodium sulphite (anhydrous) —Preservative in developing solutions and fixing baths. Energizes amidol developer. Blackens bleached negative in mercury-intensification process. $[\text{Na}_2\text{SO}_3.]$	
Paraphenylene-diamine —Developing agent producing very fine grain.			
Potassium bichromate —Sensitizer in bichromate-gelatin processes. Used in chromium intensification processes. In solution, can be used as a safelight for handling paper, etc. $[\text{K}_2\text{Cr}_2\text{O}_7.]$			

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

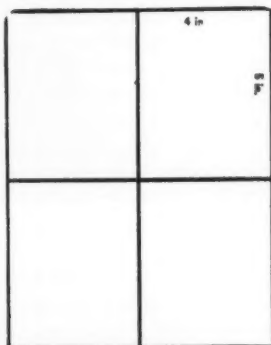
MINICAM
PHOTOGRAPHY

CUTTING SMALL SIZE SHEETS FROM 8 x 10 PAPER

Many photographers prefer to stock only 8x10" paper, cutting it to the required size when making smaller prints. This is generally more economical when prints in a variety of sizes are made or when only an occasional small print is turned out.

The following diagrams show the way to cut sheets of various sizes from 8x10"

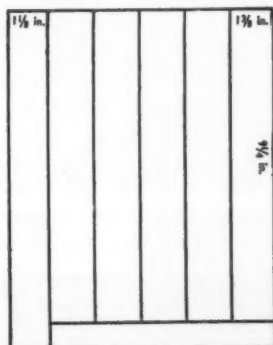
paper with a minimum of odd-sized pieces left over. For instance 16 vest-pocket size sheets can be cut from 8x10" paper when the cuts are made in one way. Cutting the sheet as shown in diagram No. 6 gives 18 vest-pocket size pieces and two odd-shaped strips. Save any extra pieces $\frac{1}{2}$ " wide or wider for test strips.



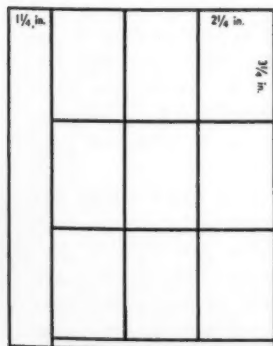
For 4 x 5" and $3\frac{1}{4}$ x $4\frac{1}{4}$ " prints: Four 4 x 5" sheets. (No test or waste strips.) NO. 1



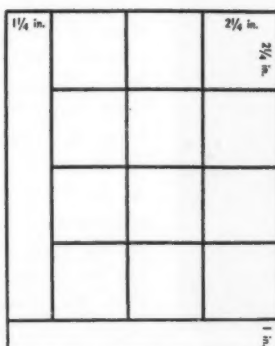
For 3 x $4\frac{1}{2}$ " prints (4X enlargements from 1 x $1\frac{1}{2}$ " negs.): Four $3\frac{1}{2}$ x 5" sheets. Test strip: 1 x 10". NO. 2



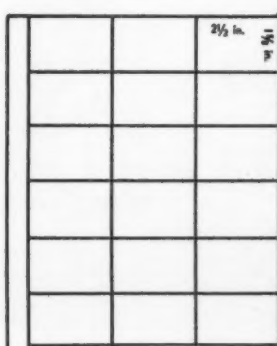
For 35mm. prints (strips of six): Five $1\frac{3}{8}$ x $9\frac{1}{4}$ " strips. Test strips: $1\frac{1}{8}$ x 10" and $\frac{3}{4}$ x $6\frac{7}{8}$ ". NO. 3



For $2\frac{1}{4}$ x $3\frac{1}{4}$ " prints: Nine $2\frac{1}{4}$ x $3\frac{1}{4}$ " sheets. Test strip: $1\frac{1}{4}$ x 10"; and waste strip. NO. 4



For $2\frac{1}{4}$ " square prints: Twelve $2\frac{1}{4}$ x $2\frac{1}{4}$ " sheets. Test strips: $1\frac{1}{4}$ x 9" and 1 x 8". NO. 5



For $1\frac{5}{8}$ x $2\frac{1}{2}$ " (vest-pocket) prints: Eighteen $1\frac{5}{8}$ x $2\frac{1}{2}$ " sheets. Test strip: $\frac{1}{2}$ x 10"; and waste strip. NO. 6

● HOW TO PHOTOGRAPH A HOME

BY ALFRED COOK

ILLUSTRATED BY THE AUTHOR

● YOU DON'T HAVE TO BE A home owner to have the fun of taking pictures of homes. If you get the most enjoyment out of subjects that stand still and *wait* for you, and yet find table-top photography pointless, interiors and exteriors of homes are just what you and your camera have been looking for. If you *are* lucky enough to be a home owner, it becomes practically a duty to picture it. If not, there are hundreds of new homes and rejuvenated older homes begging for a chance to "sit" for your camera.

This needn't be a "free session" of picture taking, either. Wherever new homes are being built, and that includes almost every town in the United States, and wherever fine old houses are being re-decorated, the architects, contractors, dec-

orators and home furnishers—and in many cases the home owners too—are looking for someone to take pictures of their handiwork.

● THE BRIGHT, CRISP SUNNY days that are best for taking exterior views of most homes won't be here much longer so let's take up those pictures first. Select a time of day when the sun is at about a 45° angle to the earth, as this gives pleasing diagonal shadows. If the landscaping is several years old, a quick tour of the yard will disclose points from which the house can be pictured to best advantage. Tree branches extending toward the house from a corner of the picture as in Fig. 1, and a few shrubs or low-growing trees in the foreground add much to any general view of the house and setting.

For architectural details, such as a porch entrance or a well-designed corner, set up the camera to show this with a faint pattern of shadows from tree branches across it. If you are taking the pictures for yourself, use any cock-eyed angle that pleases your fancy. Most architects and other potential buyers of your pictures will generally prefer to have the vertical lines of the house appear vertical in the picture. This means either keep the camera as nearly level as possible, or do a little fancy "correction" when enlarging from the negative, as described on page 33 in this issue.

● AUTUMN IS THE BEST TIME TO photograph the exteriors of homes built among large old trees that shade it during the summer months. During the week that the leaves are falling, more light reaches the house and yet enough leaves remain on the branches to make an effective frame for the pictures. This is especially true of fine old houses surrounded by trees fifty to seventy-five years old.



INCLUDE A SUGGESTION of the landscaping in exterior views of the home. Autumn foliage, for a few brief weeks, makes a color frame for these pictures. FIG. 1



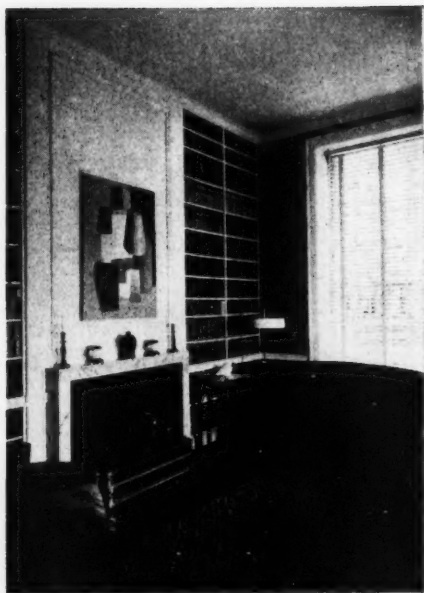
LIGHT-COLORED, PLAIN exteriors (above) are enlivened by the pattern of shadow from trees and shrubs that are part of the landscaping near the house. Bright, crisp sunshine as found in October, is ideal for shots like this. FIG. 2



A VISTA THROUGH A DOORWAY (above right) that looks out on the yard often makes an effective picture, showing details of the entranceway and porch as well as the setting for the home. FIG. 3



PICTURESQUE DETAILS ARE offered by rough masonry, long walks leading to the carefully landscaped garage or garden, and distinctively designed entrance ways (right). FIG. 4



SMALL ROOMS are most easily photographed with a wide-angle lens. When picturing apartments, as in this illustration, choose a well-arranged corner and place the camera in the opposite corner with the lights pulled well back so as not to shine in the lens.

FIG. 5

If the house is brand new don't let that discourage you. Set up the camera to exclude as much of the barren surroundings as possible and concentrate on picturing the architectural subject itself. Include an expanse of sky, filtering to get a deep toned effect. Or wait—pick a day when the clouds are right and show the house, the cloud-filled sky, and just a suggestion of the foreground.

Naturally it is easier, and often more fun to photograph a well-designed house after the landscaping has been "in" for a year or two. And the landscape architect or nurseryman will be in the market for pictures at that time too—if you get to him first.

● **NOW LET'S TAKE SOME LIGHTS** inside, and use them. Two clamp-on reflectors that take No. 1 flood lamps will be enough for rooms of average size. If

you have the stands for these lamps so much the better, as that means you won't have to fasten them precariously to doors, tables, chair backs, etc., and can move them more easily. A tripod for the camera is almost a necessity if you want really fine results. If you're going in for making these pictures to compete with professionals, then a wide-angle lens (one that has about an 80° angle of view) is part of the necessary equipment for photographing small rooms.

For indoor shots a soft-working panchromatic film is well-suited to the tone range. This is especially true if you are going to shoot against the windows as in Figs. 5, 6 and 7. Agfa Superpan Supreme, Eastman Panatomic X, and DuPont Superior 3, are recommended for this work. Contrastier films such as Agfa Finopan, and the standard commercial panchromatic cut films will give fine results if daylighted windows are not in the picture.

The best time to take interiors is early in the morning or late in the afternoon on sunny days, or any time at all on dull days. Brightly sunlit windows are likely to be tremendously overexposed if taken under other conditions. This results in "halation" or a spreading of the light around the image of the window frames until the shape of the window itself is lost.

The danger of halation is much less today, with the anti-halo backings available on modern films, but overexposed windows will still give a blank, dead white appearance that adds nothing to the print. A glimpse of the outdoors through the window of a well-arranged room makes the picture much more pleasing.

In most cases flat lighting from positions near the camera give the best results. This fills in the deeper shadows without producing "unnatural" shadows from the added lights. When the lights are in position, study the room carefully to see if any windows or glass panels in doors, bookcases, cupboards, picture frames, etc., are reflecting the light into

(Page 91, please)



THE BEST TIME TO TAKE INTERIOR views is early in the morning or late in the afternoon, as the bright sunlight during most of the day causes windows to be overexposed, creating a blank dead white effect, with danger of halation destroying the outline of the window frame and window panes.

FIG. 6



BALANCE THE LIGHTING OF THE ROOM against the daylight when taking interior pictures that include a window with an attractive view. This is another means of suggesting the setting of the home. FIG. 7

APERTURE: 6-IN LENS →
3-IN LENS →
2-IN LENS →

FAR DISTANCE

NEAR DISTANCE

MINICAM MAGAZINE'S

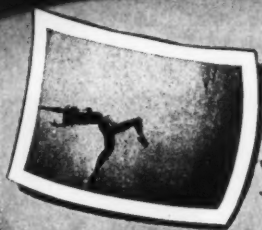
CLOSEUP CALCULATOR

DIRECTIONS: Set NEAR DISTANCE, on inner disc, opposite FAR DISTANCE on scale thus marked. Opposite arrow on inner disc, read off point at which to focus; and apertures to use, for lenses of focal lengths as marked, in order to insure sharpness between near and for distances.

Where no aperture figures are given either lens stops small enough to give sufficient depth of focus are not normally available, or (for distances farther from camera) largest lens aperture can be used if desired.

Paste this and outer ring on separate stiff cardboards.

Assemble disc and ring in original position by running small bolt, split rivet or other pivoting device through centers.



★ BEING CRITICAL

YOUR SNAPSHOTS AND HOW TO BETTER THEM

1 "Informal Portrait" is the type of photograph that often starts the inexperienced snapshotter on his way toward becoming a proficient amateur photographer. Perhaps for the first time this amateur has used his camera in the shade, getting not only a clear picture but also good modeling of the face and well-balanced tonal rendition.

Learning to take close-ups in the shade or when the sun is behind a cloud is only the start. If the subject in this photograph had light hair the dark background would have been appropriate. As it is, there is no separation of head from background.

With dark-haired subjects a better solution is to choose a camera angle that silhouettes the head against a light or medium gray background tone, such as the boards of the house in this case.

Another trick is to move the model as far as possible from the background to throw the background detail out of focus, concentrating attention on the sharply focused head.

The light lines on the print suggest a way of trimming most of the extra detail from the print, which also centers the attention on the main subject.

With more expensive cameras, which can be focused closer than $3\frac{1}{2}$ feet (the distance at which this picture was taken) the camera may be moved closer to the



1 INFORMAL PORTRAIT. Eastman Folding Kodak ($2\frac{1}{2} \times 4\frac{1}{4}$ "), f6.3 lens, Agfa film. Taken on sunny day in shade of porch. Contact print.



2 PANAMA LADY. Miniature Speed Graphic. Mendelsohn Speed Gun, No. 1 Superflash, Agfa Superpan Press film, f16, $1/200$ second.

subject, eliminating from the negative the extra subject matter trimmed off in the present example.

2 "Panama Lady" is one more proof that good equipment, *by itself*, is no insurance against getting a poor picture. This 4x6-inch enlargement from a $2\frac{1}{4} \times 3\frac{1}{4}$ -inch negative, at first glance appears to have been made from a 35mm. Super-speed negative, exposed in dim light and over-developed in a tray of some ordinary M-Q formula.

The high quality of tone and gradation found in most flash shots is missing. The head-on position of the light may have had a little to do with producing this lack of tonal quality. Failure to focus the camera accurately also accounts for the dull, unsharp effect.

The "turnip-like" appearance of the model demonstrates the inadvisability of photographing women with their hips flat to the camera. There are a few women who can pose in such a manner and look attractive, but most models are best photographed at a three-quarters angle.

The background and the girl's dress are so nearly the same tone photographically that the flat quality of the print is emphasized.

The use of a light yellow filter might have changed the color rendition of either wall or dress to give greater contrast in the final print.

Filters are not commonly used in flash shots, but sometimes they can help solve difficult problems, as in this instance, where the flat lighting makes tonal variations more important than shadow contrast.

When using filters to emphasize some color for contrast in flatly lighted pictures, the daylight flash bulbs will produce color renditions similar to those in regular filtered shots outdoors.

● "AFTER THE BATH" SHOWS WHAT overexposure does to delicate flesh tones in a portrait. Such tones are generally recorded by the scale of middle and dark grays in a good negative.

To retain these gradations, both exposure and development are balanced to avoid too much

action by either light or developer.

Overexposure and overdevelopment produce a darkening of the part of the tone scale that records flesh tones. The result is that all of the negative gray tones by which flesh is recorded become nearly as dark as the high-light areas of the negative. This "blocking up" of the lighter areas almost always results in a chalky white skin tone. "After The Bath" is an example of this chalky tone.

The best portrait negatives, no matter how sharply they may render detail, will appear slightly thin and may even look "underdeveloped" to the eye of the amateur. Such negatives, however, make superb prints, holding all the subtle skin tones with professional quality.

When using fine-grain films, avoid building up excessive contrast in portrait negatives, by shortening development time. This often helps offset the inherent contrast of many such films.

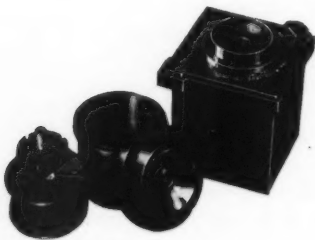


● "After the Bath." Bee Bee 2½x3½ camera, No. 2 flood, Eastman, Super-XX film, f4.5, 1/5 second.

AFTER THE PICTURE IS TAKEN

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BEGUN...DO
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★ NEWSPAPER MARKETS ★

HOW TO SELL PICTURES TO YOUR HOME TOWN PUBLICATION

● **THE NEWSPAPERS LISTED BELOW** have advised us they are in the market for photographs from free-lance photographers. That doesn't mean they are interested in snapshots, or the first print turned out by a budding amateur. It does mean that they will consider for purchase, sharp, clear glossy prints of news or feature subjects that they believe will interest their readers.

Notice that many of them explicitly state that the editor should be queried *before* photographs are submitted. This means that the free-lance photographer who has some prints he wants to sell, should send a *brief* description of the pictures, and *enclose a stamped, self-addressed envelope* for the editor's reply. If the editor thinks the subject may have sufficient reader interest to merit publication, he will ask to see the prints.

When looking over the prints in your file with view to submitting them, ask yourself these questions:

(1) Does each picture tell a story that will surprise someone?

(2) Is the paper to which you plan to submit these pictures publishing this kind of subject? You can generally tell this by looking through a month's back issues.

(3) Is the picture technically good? Is it sharp? Does it have a good range of middle gray tones and clear highlights? Is it printed on *glossy paper*?

If your answer is a definite yes to these questions, send the picture to your home-town newspaper with the assurance that it will reach the editor's desk.

Remember, however, that timeliness, a tie-up with other news items being run, and the amount of similar material avail-

able for a given issue will affect the editor's decision to accept it. Don't let the first rejection discourage you.

After you have begun to sell the home-town newspaper, and develop a "nose for news," send submissions to other papers in neighboring towns and cities.

You may bump into a subject that has national interest, even though it is not sufficiently important for professional news photographers to cover it. For example, Mrs. Brown's Garden Party is only of *local* interest. But if Mrs. Brown has developed a *new hybrid* Delphinium, that news and pictures of Mrs. Brown and the flower will interest garden editors on many newspapers.

When you hit on a feature story of national interest, remember that Life and Look, the big picture magazines, are in the market for this kind of material too.

NEWSPAPER MARKETS

Call-Chronicle Newspapers, Allentown, Pennsylvania. Query Don Miller before submitting pictures. Occasionally buys pictures of accidents or disasters of immediate news value of events not covered by its own 12 news cameras. Requires 7 x 9" Glossy prints and pays \$1 to \$3 a print on publication.

Chicago Sunday Tribune, Tribune Tower, Chicago, Ill. Send prints to Roto Editor; enclose return postage, but return of prints not guaranteed. Wants human interest photos of people, also in the market for Animals, Aviation, Marine, Nature, Recreation, Travel and other pictures of the type suitable for rotogravure sections. Requires 5 x 7" or larger Glossy prints, submitted three weeks in advance. Pays \$5 a print on publication.

Clarksburg Exponent, Clarksburg, West Virginia. Query H. G. Rhawn before submitting prints. In market for pictures of accidents, disasters and local events, all with West Virginia angle. Requires 5 x 7" Glossy prints and pays \$1 to \$3 per print on publication.

Columbus Dispatch, Columbus, Ohio. Send prints to J. Walter Stahl. Buys general news subjects. Requires 8 x 10" Glossy prints and pays \$2 to \$5 on publication.

(Page 91, please)



FAREWELL TO FOLIAGE. Come the first sharp frost, nature's given her last warning. For a picture harvest of this bright season, it's none too soon to start. Jack Frost does wonders for the leaves, but his handiwork lasts just a little while. Get up with the sun, some frosty morning, and store away this

color for the cold, bleak days to come.

Picture those leaves before the bonfires get them, or wind and rain beat them into a dark brown mass. Shoot the long grass stalks, ochre yellow in the afternoon sun, before the winter winds break them at their base. Use Autumn's color while it still is here.

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Perfect matching of contrasts and values in one scene with those in another, the use of realistic dramatic effects, and an ever-watchful eye on the lighting to keep it perfectly natural and simple are Gregg Toland's tips for better home movies. He uses them himself in his own work.



★ HOLLYWOOD CAMERA ACES ★ ARTICLE II — GREGG TOLAND BY HARRY CHAMPLIN

BEHIND THE SCENES AS GREGG TOLAND PRODUCES "THE LONG VOYAGE HOME"

● WE ARE IN THE VERY HEART of Hollywood, actually inside the portals of the famous Samuel Goldwyn studios. Everything is quiet and orderly in this small, secluded community nestled in a valley under the California sun. As we walk along the studio's famous streets in the footsteps of the great personalities of the motion picture world, our eyes take in everything about us—little buildings housing writers, cameramen, technicians of all sorts.

A friendly voice calls to us. We stop for a momentary chat with famed heavyman Ward Bond. We like him immensely. Thomas Mitchell joins us, welcomes us to this shrine of fine pictures. On we move to a large, square, windowless building marked "Sound Stage Eight."

● Inside, in a corridor signs on the wall shout "silence." In the light of a bright red globe, we wait. The red light indi-

cates shooting; pictures are being made inside. The red light blinks out and white light floods the corridor. We've been waiting for this signal; now we can go in through the big door. Our pass with the one word MINICAM is inspected, a friendly nod from the uniformed guard, and we're inside.

This whole stage is being used for the John Ford Argosy production, "The Long Voyage Home," Eugene O'Neill's momentous story of the courageous men of the sea.

From out of the darkness comes a voice which we recognize immediately as that of our host for this month—famed cameraman, Gregg Toland. "We're shooting over in the corner," he says, "Come on over and ask as many questions as you like."

● We walk quietly into the semi-darkness. Everywhere, in orderly fashion, are parts



USE OF A CEILING in this Limehouse Pub set adds realism. The flat lighting has been built up to appear as though the light on the faces came from the open-flame jets. FIG. 1

of a great ship—placed exactly as if some giant hand had carved up a great freighter and had spread the parts out in a vast hall. On we move, past sections of the bridge deck, forecastle, main deck all cluttered with booms and winches, and sections of the rustcovered sides of the ship. All is very quiet. Even our voices are hushed by the thick padding on the walls and on the ceiling some seventy feet above our heads.

Rounding a corner of wood, steel and composition board we come upon a brilliantly lighted area, on the edge of which is a big, sound-proofed Mitchell camera.

"Let's sit here, by the camera," says Gregg, motioning us to waiting chairs. Gregg is one of the truly great figures of motion picture photography. There is nothing about him that is pompous or opinionated, yet we sense at once his complete mastery of his profession, this thin, fine-featured man who photographed such outstanding pictures as "The Grapes of Wrath" "Wuthering Heights" "Intermezzo" and countless others.

● TELL US ABOUT YOUR methods, Gregg—something of interest to the average amateur. You have problems and you solve them in your own way.

Tell us about some of them."

"One of the problems of every picture I make, Harry, concerns the *perfect matching of one scene with another*. I try to adjust my lighting and exposure so that the density and contrast of one scene will blend perfectly with the one following. This eliminates much of the tiring effect of sudden changes of contrast upon the eyes of my audiences. A far more harmonious picture results when contrasts are correctly matched.

"I strive always to achieve perfectly natural lighting effects. The lighting of any picture should be so natural and so in keeping with the story that the audience is not at all conscious of it. Tell your readers, Harry, to avoid as far as is possible the use of anything but simple lighting. Far too many amateurs spoil their pictures by inserting trick lighting effects."

"An excellent suggestion, Gregg."

"Now, take this scene we're about to shoot." Gregg waves his hand. Before us is the inside of a Limehouse pub—a typical waterfront dive, complete to the last detail, even to the smears of time and countless greasy hands. One thing is at once apparent. This set has a ceiling! (Fig. 1). This is truly a new departure

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MINIATURE CAMERA STILL SHOT taken on the set of "The Long Voyage Home." Ned Scott, stillman for the picture, uses a Contax with an 85mm. *f*2 lens and Super-XX film. Some of the shots are made while the big Mitchell movie cameras are grinding, others during rehearsal. The low-key lighting emphasizes the expressions.

FIG. 2

in motion picture making.

Gregg smiles. "What do you think of the ceiling idea? I've been using them for quite some time. It's all a part of an attempt to inject realism into our pictures."

"But what about overhead lights? Surely you're not going to do away with them altogether?"

"Not at all. There is a place for overhead lighting. Exteriors, for example. We need overhead lights to give the effect of a sky and sunlight. You rarely see overhead lighting in the average home. The light comes from windows, floor lamps . . ."

Gregg lifts his hand suddenly, calling for silence. A shrill whistle; out steps the assistant with the little slate, finally the faint whirr of the motor in the big camera blimp beside us.

A portion of Eugene O'Neill's great story unfolds before our eyes. John Wayne, playing the part of a Swedish sailor, and J. M. Kerrigan, as a waterfront parasite, are right out in front of us. In the background, grouped around the bar, are other sailors from the S. S. Glencairn.

"A little drink won't hurt you none," Kerrigan says in a true cockney accent. Wayne, handsome hulk of a man, stares at him.

The lighting of this scene is truly a magnificent bit of realism. The two men are off in one corner by themselves. Just enough light is in the shadows, the high-lights are not too intense. The low ceiling, the open jet gas fixtures, the general low key lighting, form a natural background for the superb acting of these men. The shooting is finished and Gregg leans towards us.

"Notice the improvement?" he asks. We nod. "That is a type of lighting the amateur could use to good advantage," I remark. "Will you explain it for the benefit of our readers?"

"First of all we have a flat light covering everything. That is our shadow light. Then, from around corners, and through doorways, we throw stronger accentu-

ating lights. These strong lights are thrown from approximately the same direction as the light from the various gas jets. In other words, we have tried to give the effect of natural lighting."

"Can you give me any idea of the amount of light you actually use?"

"In a scene such as this approximately 35 or 40 foot-candles on the faces of the principal subjects should be sufficient."

"Do you use a meter?"

"Always. I have five of them, each adjusted for a certain range in the brightness scale. Most of the good meters will now give you a very good low light reading, but it is really hard to find a meter that will read perfectly in bright sunlight. You will get an approximate reading, yet I seriously contend that the little variations in the 165 to 600 foot-candle range should be improved. There is no substitute for accuracy. Photography is a science as well as an art. All artistry fails if the negative is of poor quality."

"That brings up something else. Do you issue special instructions for the development of your negatives?"

"I work to a standard and I let the laboratory do the same." With this, Gregg beckons to a serious-appearing man carrying a Contax camera. It is Ned Scott. "Ned is our stillman, Harry. Talk with him for a few minutes—I'll have to go into a huddle with Mr. Ford." Gregg walks away with the picture's ace director, John Ford.

"I see you're using a miniature, Ned."

"I have to use one. Mr. Ford is always calling for pictures, regardless of the action, and there are certain shots that can only be taken with a miniature. The lens is an 85mm. *f*₂, the film Super XX, and I shoot at approximately twice the speed of the big Mitchell. Sometimes I have to go even higher. Everything is made up to a 4x5 glossy—a few choice shots are blown up to 11x14 (Fig. 2). The main thing is to keep shooting. Some shots are made while the actual shooting is taking place, some during rehearsals. I don't have to worry about shadow



FOG SCENE AT NIGHT. The set has been sprayed with atomized oil which hangs suspended in the air to produce the effect of fog. Floodlights from a distance are used to get the low-key night effect. Note how the floodlights have been balanced to the light from the lantern so that it remains a bright light source, as in an actual night scene. 8000 watts of light are behind the ports.

FIG. 3

detail when I'm working with Gregg. Exposures are all surprisingly uniform."

The conference over, Gregg returns. "It will be quite some time before we do any more shooting, Harry; suppose we look around at some of the set-ups. Take this one, for example." We pause before a huge framework, perfectly balanced on a steel girder, and with special machinery to give the rhythmic motion of a huge ship plowing through heavy seas. We climb up on the framework. "This is where we made all of the below-deck scenes (Fig. 6). The camera was outside on a solid platform and it did not move. Sometimes the ship alone moved,

REALISM IS HEIGHTENED in this scene between John Wayne and Carmen Morales by the faint pattern of the companionway in the shadows on the wall behind them.

FIG. 4





THIS SHOT WAS made on a special framework that swayed slowly, giving the effect of a ship at sea. An opening in the ceiling beside the ship's lights made it possible to light the faces as though by the ship's lamps. FIG. 6

sometimes the lights moved. We'd throw a spot through a port hole and keep it moving slowly up and down or back and forth. You'd be surprised at the way your consciousness assumes that movement is actually taking place."

"That is all very interesting, Gregg. You know, many people have the idea that the camera is moved, not the set."

Gregg laughed quietly. "I wish it were as simple as all that."

We move down off the framework, to a set-up of the deck. "We used two such set-ups. One here and the other in the tank. This is where we made our fair-weather shots. The sky was a big, painted drop. Fog was created by spraying the atmosphere with atomized oil, usually mineral oil (Fig. 3). This fog was either blown on the set with special fans, to give the effect of a fog moving

(Page 80, please)



WATER CRASHING over the set built in the studio tank. In this shot the water hurled one man against the bulwarks breaking two of his ribs. FIG. 7



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WHY SPOTLIGHTS?

BY JOHN ARNOLD, A. S. C.

● THE DAY'S RUSHES WERE IN the projection booth and Tony Gaudio, one of Hollywood's foremost cameramen, was out of a job—if that "super-doooper" scene he had lighted with a spotlight had to be remade. The thought wallowed mournfully in his mind, as he sat on the edge of his chair and glanced nervously at the Director. The door opened and the great D. W. Griffith came in to see the results of yesterday's shooting.

It was back in the days when arc floodlights (Fig. 5) were *de rigueur* for lighting motion picture sets. For his pioneering experiment with spotlighting, Tony had bravely chosen the climax scene. It pictured a boy and girl seated by a fireplace in the glow of a blazing log. As

the camera started to grind, everything was perfect.

Suddenly shadows flickered across the girl's face. The Director's eyes popped. Too startled to speak he let the action continue to the end of the scene. Then he jumped up.

"Tony!" he roared, "you've ruined my scene. How will those shadows look on the lovers' faces? What made those flickers?"

"I borrowed a small arc spotlight from a theater," Tony explained, "and put it behind the burning log in the fireplace. Then I had a tree branch moved up and down in front of the light to give the flickering effect of flames—"

"If that scene has to be remade, I'll



HIGHLIGHTS ADD grace and texture and modeling to this still life by Fred Archer. This effect is easily produced by the use of small spotlights at the proper angles.

FIG. 1



REALISTIC EFFECT of concealing a Dinky Inkie spotlight inside lampshade. Lamp appears to be main light source in this portrait of Don Ameche, 20th Century-Fox player.

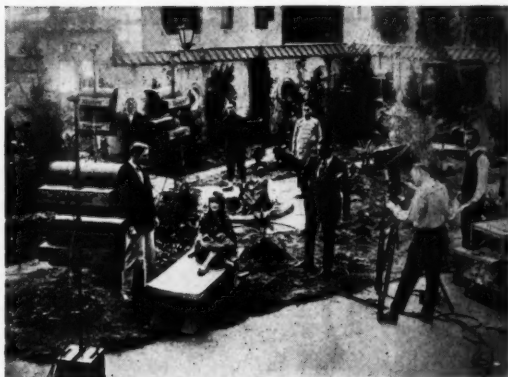
FIG. 2



STRONG, UNDIFFUSED LIGHT from the main light source (key-light) is best suited to portraits of men. In this picture of Tyrone Power, 20th Century-Fox player, by Gene Kornman, the strong key-light has been placed at such an angle that the nose shadow reaches the corner of the mouth. FIG. 3

SOFT, WELL-DIFFUSED LIGHT from the key-light is the general rule for portraits of women. Eugene Robert Richie's portrait of Dorothy Lamour, Paramount player, uses a soft key-light. The highlights on the screen and plant in the background are from small concealed spotlights. FIG. 4





ARC-LIGHT "BROADS" or flood-lights (at extreme left in this picture of a glass-roofed set of 1918) were the conventional lighting units of that period, producing "flat, featureless" pictures. Today small spotlights are used for realistic and dramatic effects in both professional and amateur motion pictures. FIG. 5

see that you lose your job," the director had said and stomped off the set.

The lights in the projection room went out and the spotlight scene flashed on the screen. The illusion of flickering firelight was perfect, just as Tony had visualized it. "Tony," Griffith exclaimed, "You are a genius. Get more spotlights—that scene really sparkles!"

● **THAT WAS THE BEGINNING OF** natural lighting effects now seen in all interior pictures. Before 1916, all stages were out-of-doors or glass-covered. Cloth diffusers were ringed to overhead wires and moved back and forth as the sun changed, keeping the entire set properly diffused. In order to highlight an actor or object on the set, assistants to the cameraman were stationed overhead with mirrors to reflect the sun's rays in under the diffusers. This was a technical job, but when the sun went under a cloud (as it does even in California) shooting stopped.

In 1916, Universal City erected Hollywood's first enclosed, artificially lighted stages. These were in a 60x300-foot studio equipped with large blue Mazda-type globes, banks of Cooper-Hewitt tube lights, and a few heavy arc broads. These were the last word in artificial lighting, but photography remained flat and featureless. Players filmed under these lights looked like animated dolls cut out of paper. To combat this effect, Tony Gaudio and other spotlight pioneers

began their lighting experiments.

Robert Z. Leonard, the famous director who is still a top-notch, first used a spotlight for glamor photography in a Mae Murray picture. Both director and star were enthusiastic when they saw the effect of the spotlight on the famous blond curls. Leonard at once demanded enough spotlights to light an entire scene, but there were only three old theater spotlights at Universal City where the picture was being made.

The only spotlights in California were in the legitimate theaters, and all of these that could be bought, borrowed, rented, or "high-jacked" were rushed to the studio. The picture clicked, and the spotlight was on its way!

Backlighting became the major duty of spotlights, because they could be easily adjusted for the spread and intensity that the cameraman wanted. As more "angles of lighting" were discovered, the spotlight was used to give effects of depth and roundness to the pictures. What the professional motion picture makers learned from these men, the amateur cinematographer can learn today from the professional. Every little trick about spotlights that the amateur does learn, brings him closer to the present-day perfection of Hollywood's master cameramen.

● **SPOTLIGHTS OF VARIOUS SIZES** do about 99% of all the lighting of today's motion pictures. They provide the



TWO METHODS OF LIGHTING SMALL SETS. The small size of the Dinky Inkie spotlights permits the use of several lights to get cross-lighting and back-lighting effects even in cramped quarters. FIG. 6

"key light" or the principal source of lighting illuminating the players. They provide the modeling light which, striking from other angles in front and sides, gives an illusion of natural roundness to faces and figures. They light the set, providing the delicate gradations of highlight, half-tone and shadow that give the illusion of depth. They provide back-lighting on both people and objects, to make them stand out clearly from the background. The floodlight type of lamp is still used, but very sparingly; usually merely to throw a soft foundation of "fill-in" light to prevent shadows from going black. There are rarely more than two or three floodlights on a modern set, yet dozens of spotlights are used.

When panchromatic film and incandescent lighting first appeared about twelve years ago, the most popular spotlighting units were designed around big 5000-watt and 10,000-watt globes. The more delicate gradations in lighting on sets and players were provided by relatively large 500-watt "baby spots." Today the professional studios use 1000-watt and 750-watt units to carry the main burden of lighting on the sets, and "Dinky Inkies," using a little 150-watt projection globe, do the work of the "baby spots."

This development brings professional spotlighting right into the province of the



CLOSEUPS IN AMATEUR films take on a professional appearance when the spotlight arrangements shown at top of page are used. FIG. 7

amateur. The "Dinkies" draw only a little over half as much current as a No. 1 flood bulb (1.3 Amperes compared to 2.17 Amperes) and are safe to use on most home lighting circuits. Their light is even more useful for home movies than for 35mm. studio cinematography, because the amateur today uses faster lenses and films than are generally used professionally. This permits lighting relatively large amateur sets with the "Dinky Inkies."

● THE HOME MOVIE-MAKER CAN use these "Dinkies" not only as the professional does, but often in ways the professional can't yet utilize them:

First is the matter of the "key light"

the *principal lighting* on a person. As a rule this is placed more or less in front of the subject, shining down on the face from above. Photographing a girl, for instance, we often get the most glamorizing effect if the keylight comes from straight ahead and is directed downward in such a way that the top of the beam is slightly above the eyes, and the forehead falls in soft shadow.

With other types of features, on either men or women, the most pleasing results are achieved by placing the key light slightly to one side at such an angle that the nose-shadow reaches down to the corner of the mouth (Fig. 3).

With women, as a rule, the keylight should be soft and well-diffused (Fig. 4); with men, a stronger undiffused light accentuates the impression of masculinity (Figs. 2 and 3). Spotlights which can be accurately controlled as to spread and intensity are the best sources for this type of lighting. When two persons, requiring different types of lighting are in a close shot together, the use of two "Dinkies" makes it possible to give one of them soft lighting and the other more brilliant lighting.

Spotlights play a vital part in getting roundness in the subject (Fig. 1), for their beams can be directed from one side or the other to accent the natural highlights that give this impression. In this use, too, place the spotlights rather high.

For the home filmer or portrait photographer who uses true backlighting, tiny spotlights can be hooked onto curtain rods and picture mouldings (Fig. 6), or even held to the walls with rubber suction cups. This permits mounting them behind the subject, with their cables suspended out of the picture, to provide a very essential angle of light.

In lighting the background use the small lamps to highlight door arches, pillars, wall recesses, folds of draperies, etc. Furniture, chairs, tables, and the like can be backlit or cross lighted to give highlights along their edges which makes

them stand out from the walls.

The studios also found that these small lights can be hidden right in the scene, behind a chair or table, a pile of books, a bowl of flowers, or even in the lamp shade of a table lamp (Fig. 2) to cast their beams in the direction needed.

In every scene there are as many sources of light as there are reflecting surfaces. Study and analyze these light values. Place the lights, then have the cast slowly rehearse the action.

If there is a leading character around whom the plot or action is centered, have that person rehearse alone, almost in slow motion. Stop them when you see a bad shadow and change your light. The focusing or moving of a single light often makes a world of difference and even a little study and control can snap up the photography and emphasize the important actions or facial expressions.

The intensity of the light from the Dinky Inkie is increased more than four times as it is focused from flood to spot.

Someone has said that a smile is "light" and a frown is "darkness." When the sequence calls for a jolly expression put a spotlight on the smile, keeping the light high. A low light source produces weird effects, and imparts a menacing, suspicious, or tricky look to the face.

During the actual shooting of a scene, the face of the central figure can be followed with a spotlight, or some object handled by the actors can be highlighted as it is moved from place to place. By controlling these lights, the intensity can be kept in harmony with the general lighting so an audience is not aware that a special light is on the important subject.

Amateur cinematography is close on the heels of the professional film, emerging from flat floodlighting to precision modeling with spotlights. The amateur of today has this tremendous advantage: the professional has already covered the same ground, and left a road-map to make the going easier for those who follow.



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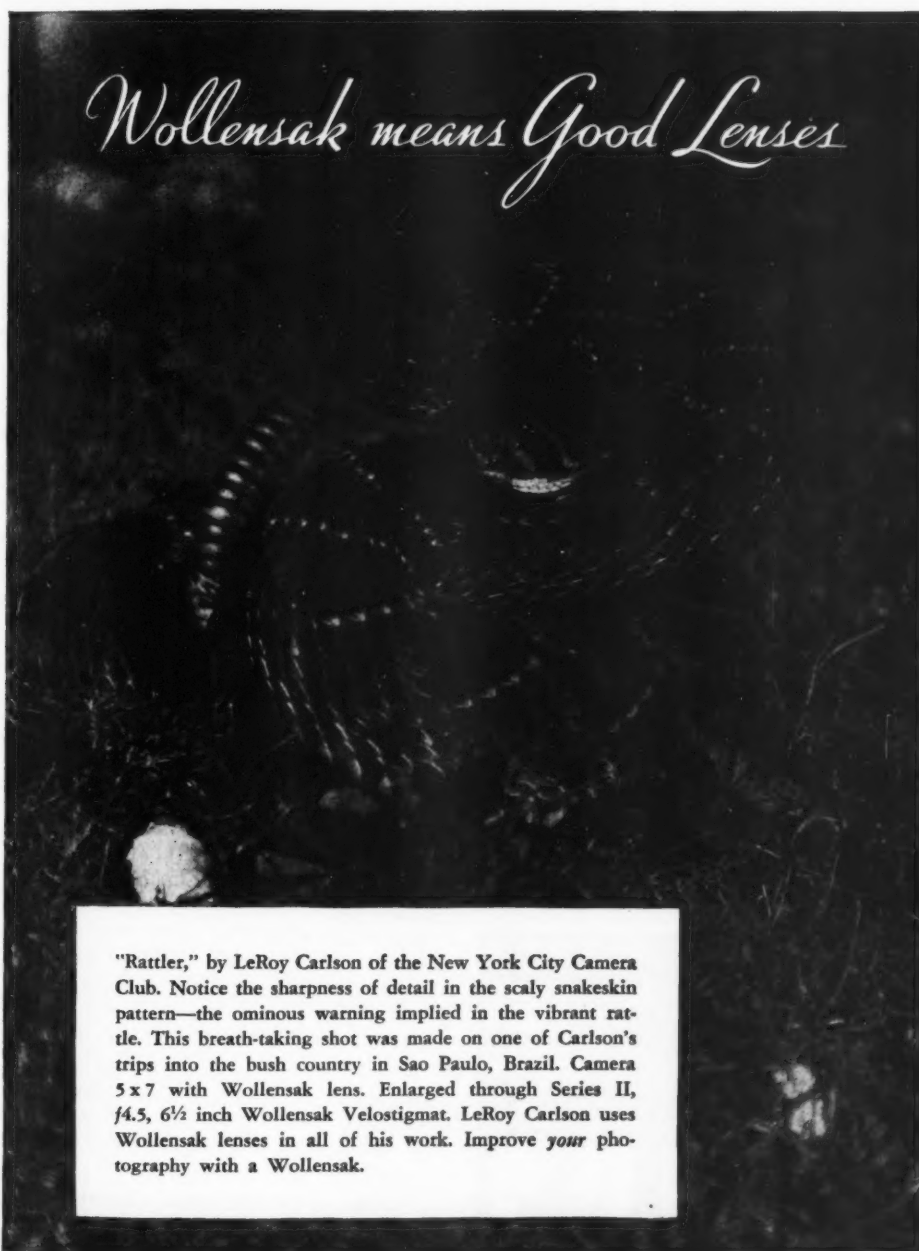
CONTEST CALENDAR

Open to	Subjects	Prizes	For copy of rules, write to	Contest closes
Anyone.	Living wild birds and animals in their natural surroundings.	\$20, \$10 and \$5.	Miss Alice Morgan Wright, 393 State St., Albany, N. Y.	October 25
Residents of Continental United States, Hawaii, or Dominion of Canada.	Babies under two years old.	\$250, \$100, \$25, and one hundred prizes of \$1 each.	"The 'Junket' Folks," Chr. Hansen's Laboratory, Inc., Little Falls, N. Y.	October 31
Residents of the United States, or its possessions.	Gardens, and plant material such as trees, shrubs, flowers, fruits, vegetables, etc.	In each of five classes: \$10, \$5, \$1.	E. Eleanor Knight, Pittsburgh Garden Center, Schenley Park opposite Phipps Conservatory, Pittsburgh, Pa.	October 31
All amateur photographers.	Attractive, modern kitchens, showing gas range not over two years old.	\$250, \$100, \$50, and twenty prizes of \$5 each.	Kitchen Contest Editor, American Gas Association, 420 Lexington Ave., New York City.	December 1
Anyone.	Photos taken with a Kalart Speed Flash.	Over \$500 in merchandise, total of 35 prizes. First three are Speed Graphic, Omega and Solar enlargers	The Kalart Company, 915 Broadway, New York City.	December 31
Anyone.	Any print colored with Raygram Photo Colors.	46 merchandise prizes.	Contest Editor, Raygram Corp., 425 Fourth Ave., New York City.	February 15
All amateur photographers.	Desert subjects.	\$5 and \$3 monthly.	Contest Editor, "Desert Magazine," El Centro, Calif.	20th of each month.

EXHIBITS

City	Street Address	Dates Open	Name of Exhibition
Atlanta, Ga.	High Museum of Art, 1262 Peachtree St., N. E.	October 1 to 20; 9 a. m. to 5 p. m. weekdays, 2 to 5 p. m. Sundays.	Second Annual Atlanta National Amateur Salon.
Burlington, Iowa.	Public Library.	October 20 to November 2; 9 a. m. to 8 p. m.	Third Annual Tri-State National Salon.
Cleveland, O.	Cleveland Museum of Art.	September 28 to October 31; 9 a. m. to 10 p. m. Wednesday, 2 to 6 p. m. Sunday, closed Monday, 9 a. m. to 5 p. m. other days.	1940 International Salon of the Photographic Society of America.
Detroit, Mich.	Detroit Institute of Arts.	October 3 to 31.	Fourth Annual 100-Print Salon of the Photographic Society of America.
Elkins, W. Va.	Public Library.	October 3 to 15; 1 to 9 p. m.	Photographic Salon of the Eleventh Annual Mountain State Forest Festival.
New Bedford, Mass.	William Crapo Gallery.	October 20 to 27; 1:30 to 4 p. m. weekdays, 2 to 5 p. m. Sundays, 7 to 9 p. m. evenings except Saturday.	Swain School of Design Salon.
New York City.	Gardens on Parade, World's Fair.	October 7 to 27; 10 a. m. to 10 p. m.	60 Winning Photographs from "Gardens on Parade" Photo Contest.
Pine Bluff, Ark.	403 Main St.	October 22 to 26, 3 to 5 and 7 to 10 p. m.	First Annual Arkansas Amateur Photographic Salon.
Pittsfield, Mass.	Berkshire Museum, 39 South Street.	October 19 to November 3; 10 a. m. to 5 p. m. weekdays, 1 to 5 p. m. Sundays, closed Mondays.	Third Annual Berkshire National Salon.
Vineland, N. J.	543 Landis Ave.	October 13 to 18; 2 to 10 p. m. daily.	First Annual Exhibit, Camera Club of Vineland.

Wollensak means Good Lenses



"Rattler," by LeRoy Carlson of the New York City Camera Club. Notice the sharpness of detail in the scaly snakeskin pattern—the ominous warning implied in the vibrant rattle. This breath-taking shot was made on one of Carlson's trips into the bush country in Sao Paulo, Brazil. Camera 5 x 7 with Wollensak lens. Enlarged through Series II, f4.5, 6½ inch Wollensak Velostigmat. LeRoy Carlson uses Wollensak lenses in all of his work. Improve *your* photography with a Wollensak.

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Hollywood Camera Aces, II

(Continued from page 70)

in from the sea, or sprayed so fine that it remained suspended in the air for a considerable period. Day and night effects were created by lighting the fog with either floods or small spots.

"The rough-weather scenes were made in the tank. In one storm sequence we sent thousands of gallons of water charging down a chute to the deck of the ship (Fig. 7). It was the real thing—so great was the force of the water that one of the principal characters was thrown against the bulwarks and had two ribs broken. It was real and the camera caught all of it."

"I've seen many pictures, Gregg, where the rush of water appears tremendous."

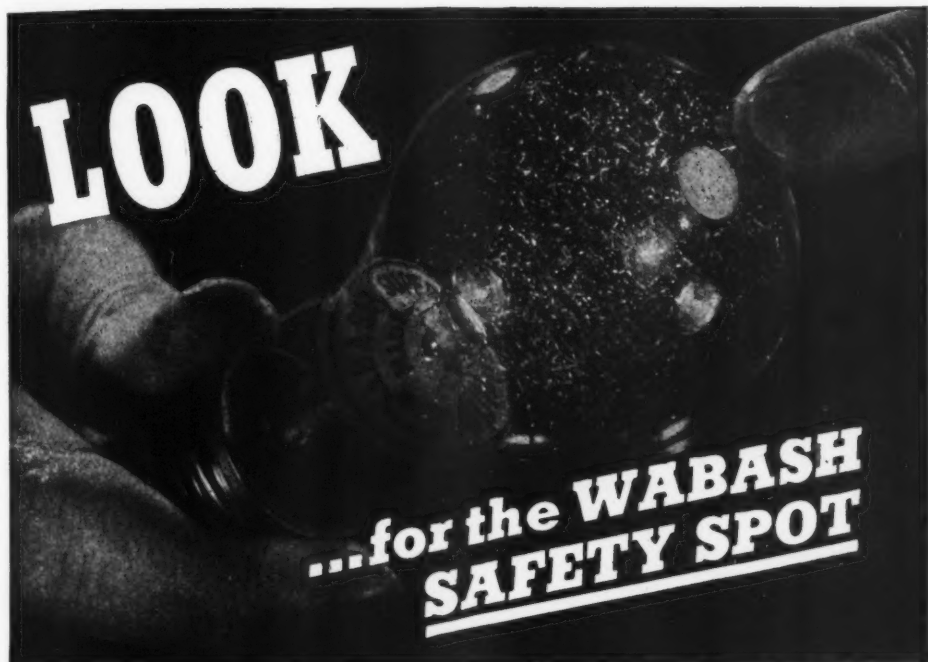
"Sometimes the camera is slowed down to half speed, from a normal sound speed of 24 frames per second to 12, and this makes everything appear to move twice as fast. Sometimes the effect is overdone. On this picture we tried to make everything appear as real as possible. It is a great picture, a great story, and a timely one at that. Mr. Ford is a stickler for detail—everything has to be just right. Why, see those air-raid warning posters over there on that wall? That is an exact replica of a bit of the Limehouse waterfront and those posters are the real thing. This whaleboat is an exact duplicate of the type used on ships such as the S. S. Glencairn. These holes—see them? The camera was set here" (indicating a point below the whaleboat), "a six-inch lens was used, and the camera was timed with the machine gun that made the holes. The shot had in it all the real drama and excitement. I, too, was thrilled with it.

"It seems to me, Harry, that the real key to the success of any picture, whether movie or still, depends on realism, on the truthfulness of the story it conveys."

"I've noticed, Gregg, your pictures are all real and the lighting is simple. Sim-

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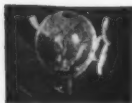


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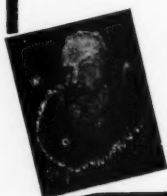
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"I can readily believe that, Gregg."

We walk slowly back to the entrance corridor.

"One more question, Gregg. Do you do any amateur photography?"

"Well," says Gregg, laughing, "you know how much . . . you've been developing all the pictures of my little girl. When I feel real arty I make some Kodachromes in my Bantam Special. Did you see the ones we made in Guatemala last spring?"

Outside, we walk along the quiet thoroughfares of this birthplace of many outstanding pictures, pause for chats with Samuel Goldwyn, Walter Wanger, James Roosevelt. At the gate we say goodbye to Gregg Toland, repeat what is going over and over in our minds. We have watched a great picture in the making.



"I'll be home a little late from the camera club to-night, dear—I'm developing my roll."

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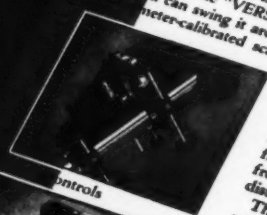
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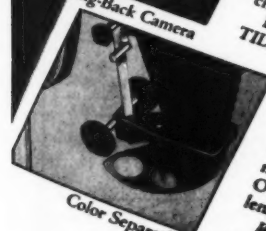
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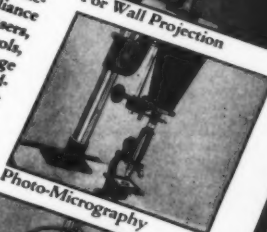


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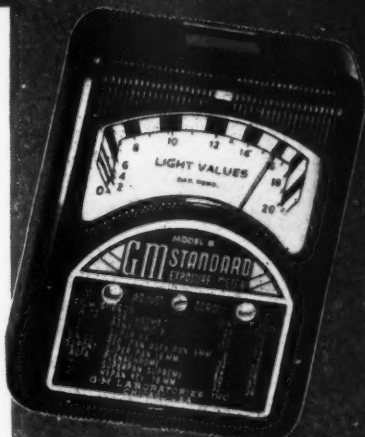
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October 12	First Annual Arkansas Amateur Photographic Salon	Pine Bluff Camera Club, c/o J. C. Fox, Box No. 896, Pine Bluff, Ark.		
October 19	Eleventh Annual Salon of Pho- tography	B. C. Norrman, Salon Director, 1213 Revell Ave., Rockford, Ill.	4	\$1.00
November 8	Annual West Virginia Salon of Photography	Salon Committee, 110-A McFarland St., Charleston, W. Va.	4	\$1.00
November 12	Fourth Southern International Salon of Pictorial Photog- raphy	Lee M. Klinefelter, Chairman Salon Committee, 1800 La Salle Ave., Nor- folk, Virginia.	4	\$1.00
November 15	Second Annual Boston Inter- national Salon of Nature Photography	Boston International Salon of Nature Photography, 234 Berkeley St., Boston, Mass.	4 in each section; maximum of 10	\$1.00
November 16	Third Annual Southern Califor- nia Photo Salon	Marshall H. Myers, 809 Palm Drive, Glendale, Calif.	4	\$1.00
December 1	Twenty-Fourth Annual Interna- tional Photographic Salon, Camera Pictorialists of L. A.	Larry Lawin, Secretary, Los Angeles Mu- seum, Exposition Park, Los Angeles, Calif.	4	\$1.00
December 6	The Springfield Salon (Third International)	John Funaro, Director, 110 Rochelle St., Springfield, Mass.	4	\$1.00
December 10	Pan-American Salon of Photog- raphy	Chairman, Pan-American Salon Commit- tee, Photographic Society of Philadel- phia, 1420 Chestnut St., Philadelphia, Pennsylvania.	4	\$1.00

How to Take Good Pictures

(Continued from page 43)

the to-and-fro of swinging come when the swing is momentarily motionless, at start and finish of the arc. In between these two points the swing picks up speed and is going fastest in mid-swing. But at mid-swing, the ropes are straight up and down, just as they are when the swing is idle. With plenty of shutter speed it is entirely possible to make a snap of the swing at that point, but . . . why bother? Aside from the evidences of movement you'll get in wind-blown tresses, skirts, and such, you might just as well shoot your subject sitting quietly in the motionless swing.

Nope, the thing to do, if you really want a swing picture, is to snap when your subject has reached one of the ends of the swing's arc. You can use a normal speed, about 1/50 in most cases, and you have the advantage of a dynamic looking picture. The ropes are at a good angle, your subject is sure to be animated, and the necessarily low camera angle automatically emphasizes the thrill of swinging.

All of which serves, we trust, to point up our theory that, in photography, the easiest procedure is usually the best. You can always do things the hard way, but if you don't reap corresponding benefits, why bother?

- More or less analagous to the swinging subject is that of the fancy diver. You can "stop" a swan-diver at the top of his bounce with a normal exposure; but the start and the finish of the dive require a lot more speed. Of course, your vantage point will also govern your choice of speeds, but here again the best will turn out to be the easiest. And by "best" we recommend a low camera position, looking up across the pool at the diver. That way you get on-coming action, with the sky for a background. Very pretty.

There's another thing to remember about speed or action pictures. If you stop things absolutely cold, they look that

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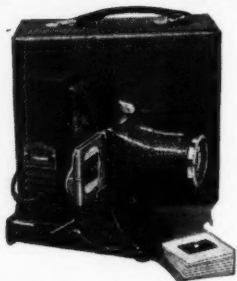
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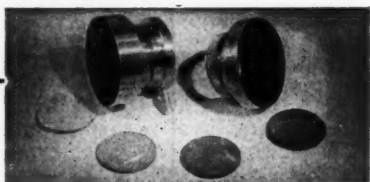


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way—frozen. It's far better to have a suggestion of movement in your picture; the 100 percent suspended animation of the perfectly stopped action subject robs it of the very thing that will make your picture a picture and not merely a laboratory demonstration.

If you're skeptical and have an ocean handy, try this out on a close-up of surf. Shoot one picture of a breaking wave at top speed; then try another at 1/100. In one you'll have a portrait of a bunch of icy-looking, hard-looking water particles; in the other you'll have a very wet, very strong, very real wave, with movement in it.

The Story Behind the Picture

(Continued from page 30)

For the better part of a month I fooled around with the end of that log. In my spare time, that is. Finally I got what I wanted. I used one spotlight at ten feet, and with my Speed Graphic, exposed for 30 seconds with the Conley lens stopped down to f64.

The reason I put the spotlight so far away was that I discovered that the light source at that distance made the shadows of the splinters run more nearly parallel. The Superpan Press film was developed in Agfa 47, and the print—which I could hardly wait to make—on Brovira Glossy Medium. I chose glossy paper to bring out all the sharp texture and detail that was in the negative. The print was then toned. It seemed to me that sepia toning gave the print almost the same effect as the actual color of the logs. With the exception of the sepia tone, and cropping in the enlarger, there was no other control process used.

● I combined the final spotting of the print with the one control process I forgot to mention—that of picking splinters out of my hands! And if anybody ever tells you that there is no hard work in photography, give 'em my address.



● STRICT ORDERS WERE GIVEN THE news photogs when they arrived at the German-American Bund camp at Nordland, N. J., to cover the joint "anti-war-pro-American" rally of the Bund and the Ku Klux Klan. The photographers, escorted by Klansmen and Bundsmen, were admitted to the grounds and taken into the presence of the Grand Dragon of the Klan, Arthur A. Bell. "Boys," said the Klan leader, "we're going to pay ball with you. You can take all the pictures you want of us—the members. But not of Bund members." Photographers were placed in a position facing the speakers' platform. Behind them were Bundsmen in uniform. The lensmen got the one important picture they were after—who cared about shooting the Bundsmen's mugs, anyway?—the shot of the Klan and Bund leaders shaking hands on the platform. The publication of that picture had its unpleasant repercussions for both the Bund and the Klan.

● A BOOMERANG BOOMERANGED and caught Byron Rollins, Wide World's Washington staffer, on his scalp as he was snapping pictures of Vice-Presidential candidate Henry A. Wallace (an expert boomerang thrower), teaching the art of the Antipodes sport to Attorney General Robert H. Jackson in Washington. The former Secretary of Agriculture gave him first-aid treatment. Later five stitches were required to close the wound.

● NEWS PHOTOGRAPHERS WHO COVERED the First Army maneuvers in New York State were practically given carte blanche in picturing the war games. Cooperation between the staff and the press was of the finest. Special cars were placed at the disposal of the cameramen each morning to carry them to all important sectors. A modern, well-equipped laboratory at the High School in Ogdensburg was placed at the disposal of the photographers to process their films and make prints for wired photo transmission. The Army issued special passes and arm bands to all accredited photographers. Army planes flying between Ogdensburg and Mitchel Field and LaGuardia Air-



1. **THAT** the use of potassium carbonate in place of sodium carbonate in a print developer puts more pep in your prints (because it gives a developer with a higher pH).
2. **THAT** an Amidol developer will give cold blue-black tones on practically any paper.
3. **THAT** Chlorhydroquinone in place of hydroquinone gives you better black tones (less greenish tint) and less tendency to fog in your prints.
4. **THAT** once a film emulsion swells, it stays swelled up as long as it is wet no matter what solutions it is placed in. (Successful hot weather developing requires that emulsion swelling be kept to a minimum at all stages in developing and fixing until the emulsion has been thoroughly hardened.)
5. **THAT** if a film is thoroughly hardened in a fresh chrome alum bath and dried, it can be dipped in boiling water without melting the emulsion.

These are only a few of the many useful pointers on how to develop better pictures that you will receive when you read Edwal's popular 96 page book "Modern Developing Methods." Ask your dealer for a copy! If it shows you how to save only a single print, you'll agree it is well worth the investment—fifty cents!

If you want to know how to judge all developers more intelligently, you'll especially enjoy Dr. E. W. Lowe's book "What You Want to Know About Developers." It brings you up to date on the progress that is being made today in the entire field of developers. Accurate. Authentic. Comprehensive. 176 pages \$2.50.

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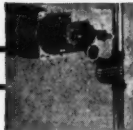
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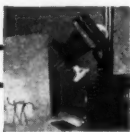
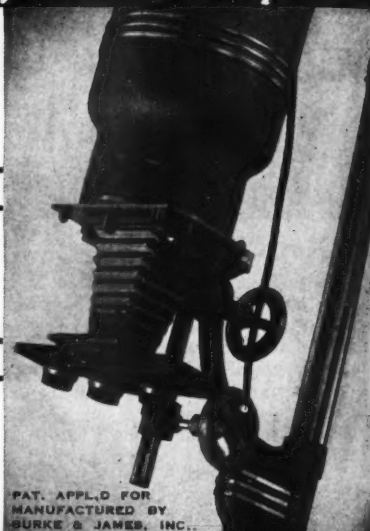


Table Top

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ports carried packages of films for the newspapers and picture agencies in New York City, ensuring the making of deadlines and the speedy servicing of prints to member newspapers throughout the country.

● **SAM MYERS, VETERAN NEWS PHOTOGRAPHER** and manager of Wide World's Philadelphia office, has been in many a hot spot, including the filming of the dirigible Hindenburg, but never in as torrid a one as the recent coverage of the fire which swept and destroyed the R. H. Hollingshead Company, automobile polish plant at Camden, N. J.



Flames were pouring through every window and soaring high through the roof when the first walls started falling. Sam dashed forward through the fire lines to get those spectacular shots. A searing heat smacked him full in the face, and almost felled him. Around him, firemen with ice packed under their helmets were playing their hose lines. No ice cubes for Sam! He raised his camera to his face to get his first shot, but he could not hold it. The metal finder was red-hot. However, he stood his ground as the heat enveloped him like a waft from an open-hearth furnace, and made a dozen shots in all, as the walls of the blazing inferno crumbled into the street directly in front of him.

When he retreated into the doorway of a store on a nearby corner, he casually glanced at the thermometer. It registered 175°!

After cooling off a bit, Sam packed the film, and dispatched a messenger to Philadelphia to porter the negatives to the New York office. There, the films were found to be unscathed, every one a gem in a pictorial dramatization of the giant blaze. The terrific heat had not affected them in the slightest.

Camera Earns Way Through College

(Continued from page 53)

full-lengths may be shot free for a student magazine, the contestants are always good prospects for a sale. Besides being profitable, these beauty contests are fun. There's something about a photographer that makes Betty Coed chummy right off the bat. Get some really good-looking shots and you may have a girl-friend for life.

It takes a little imagination and a lot of hard work to get enough student gold to pay most of the college bills. With the same amount of work and a terrific imagination, nobody will call your income "hay."

● GOLD MINE No. 3 IS PUBLICITY.

Big universities maintain a public-relations staff, who send important student news items and pictures to the papers back home, all of which nets the university a free mention. Make an arrangement with this department to cover events for them. It may not pay off in a salary and tuition, but some folding-money can be picked up on a free-lance or piecework basis. In some cases, it may be possible to get free tuition for work done for the publicity department. There is always



"... and the minute Junior gets home from school warn him to lay off my new camera."

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So . . . get your entry blank now from your dealer or write direct to Kalart. Entry blank gives full details and contest rules. The contest closes December 31st. You may enter as many prints as you wish. Start shooting now! Get out your camera—and your Kalart Micromatic Speed Flash—and go after one of these prizes! Send for your free Entry Blank now!

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room for one more passenger, on an ocean liner or in a university.

● **GOLD MINE No. 4 IS THE COLLEGE TOWN.** Even small college towns have possibilities, if there is no local professional photographer. In the larger city, there are always the free-lance possibilities in legal, industrial and portrait photography. Artistic photographs of the campus, the buildings and civic beauty-spots, can be neatly framed and sold at a profit. Persuade a local art-dealer to display these photographs in his shop. Perhaps the college bookstore or the lunch-room where students hang out will put them on display.

Working on advertising or publicity will net free passes to more events than can possibly be covered. At the football games, you will be down on the sidelines. You will meet and photograph all the important faculty members of the school, and they will recognize you when they see you on the streets. It also means free admission to student plays, radio programs, and even dances.

A campus cameraman gets to see what the other students are doing. Students in one college of a big university seldom go into other colleges to see what's going on there. But the photographer assigned to picture a chemistry student with a new device to test rainwater will come away with a lecture on rainwater, the invention, and the inventor. This leads to many interesting friendships.

Very often, pix made with one market in view will turn out to be salable elsewhere.

No matter what arrangement you can make, no matter whether you earn all or only part of your college expenses with your camera, you are bound to find a far easier row to hoe than most of the other working-through students who work long hours and wind up with almost nothing. Photography is a profession, and as such is not sold by hours alone.

Well, how about it? Do you want one of these first prizes? Roll out the spare film and let's go to college!

How to Photograph a Home

(Continued from page 58)

the camera lens. These "hot spots" are particularly undesirable in an interior picture, as they destroy the form and texture of the reflecting objects.

Sometimes highly polished woodwork or a bare wall will pick up a hard reflection. In these cases, a diffuser of Transpara, tracing cloth, or other diffusing medium should be used over the light that causes the trouble. Always try to remedy the reflection by moving the light slightly or changing its angle, before diffusing it, as the contrast of the picture will be lowered considerably by any added diffusion.

In every case strive first of all for a natural effect, and if the picture is taken in the daytime, use only enough light on the shadow sides of the furniture to give detail (Figs. 6 and 7) without overbalancing the light from windows and doorways.

On the interior pictures use a stop of $f/22$ or $f/32$ if your camera has that setting. Otherwise use the smallest stop you do have, at least $f/16$, if you wish to carry any real sharpness in near objects as well as those toward the far end of the room. Before making the exposure carefully conceal the wires running to your lights, either by slipping them under the rug or placing them along the baseboard behind the larger pieces of furniture.

Newspaper Markets for Pictures

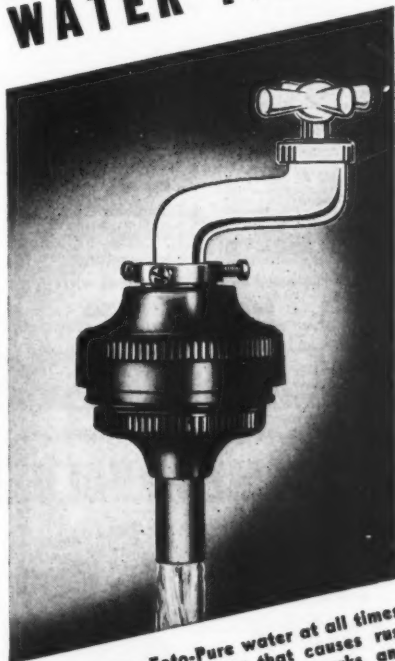
(Continued from page 63)

Denver Post, Denver, Colorado. Rotogravure Contest every six months. Send clear Glossy enlargements, 5 x 7" or larger. Include information on the subject, giving name of any scenic subjects and telling near what town it is located.

Des Moines Sunday Register, Des Moines, Iowa. Query Ken Clayton before submitting prints. In market for interesting features, accident, agriculture, and arts and crafts pictures. Buys smash single pictures and complete picture-series features that contain striking "punch" shots. Needs pictures three weeks in advance of publication. Requires 8 x 10" Glossy prints and pays \$5 a print.

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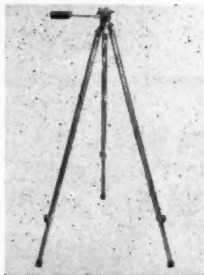
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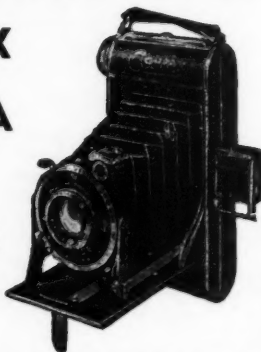
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f/4.5 lens in
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Here's the outstanding buy in versatile and practical picture-size cameras. Makes 16 pictures 1 1/4 x 2 1/4" or 8 pictures 2 1/4 x 3 1/4" (6.3 model makes only 8 pictures 2 1/4 x 3 1/4"). Extremely light and compact, yet built to last indefinitely. Sharp cutting lens equipment assures perfect pictures. Has hinged back, metal body, leather bellows, brilliant waist-level view finder and metal frame eye-level finder both with masks for smaller frames . . . and other features.

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Minneapolis Star-Journal, Minneapolis, Minnesota. Send prints to Nat S. Finney, Picture Editor. Primarily interested in spot news pictures. Copy must be satisfactory for reproduction on news print in 65-line halftones, having close to middle tones, good gradation and avoidance of masses of black. Hair-sharp pictures preferred. Keep objects large in comparison to total picture area. Requires 8 x 10" Glossy prints. Submit pictures for roto section two weeks in advance. Query Picture Editor on any feature picture, but no acceptance except after submission. Pays \$2 and up for each print used.

New York News, 220 East 42nd St., New York, N. Y. W. J. White, Jr., Picture Editor. Interested almost entirely in spot news photographs. Require 8 x 10" Glossy prints. Payment on publication.

Oklahoman, The Daily, Oklahoma City, Oklahoma. Query Harold F. Johnson, Sunday Editor, before submission. Buys Agriculture, Historical, Home, and Garden, Radio and Sports pictures. Requires 8 x 10" Glossy prints submitted 10 days in advance of publication. Pays \$2.50 for the average print on publication; higher rates for exceptional shots.

Philadelphia Record, Broad and Wood Streets, Philadelphia, Pennsylvania. Send prints to City Editor. Buys spot news shots and pictures of socially prominent persons in the news. Requires 5 x 7" or larger Glossy prints and pays \$3 a print and up on acceptance.

Post-Intelligencer, Seattle, Washington. Edward Stone, City Editor. Buys 8 x 10" Glossy prints from local free-lance photographers only.

San Jose Mercury Herald, San Jose, California. Send prints to City Editor. Buys mainly spot news pictures from free-lance photographers, regular staff supplying other needs as well as most of the spot pictures. Interested only in shots of nearby events. 5 x 7" and larger Glossy prints required. Pays \$1 a print on publication.

Youngstown Vindicator, Vindicator Square, Youngstown, Ohio. Query W. L. Powers, Managing Editor, always before submission. Uses a few free-lance pictures of nearby accidents, disasters and other news events. Buys some animal, marine, and nature pictures. Requires 5 x 7" or larger Glossy prints, submitted two weeks in advance. Payment depends on picture.

From Wilson to Willkie

(Continued from page 13)

The police came running up thinking someone had thrown a bomb at the nominee. Everyone was on edge about bombings in those days just before the last war. The explosion blinded me, and the flame burned my hands and face badly. Fortunately my glasses protected my eyes from permanent injury.

After the officers examined my credentials and were convinced that I was no anarchist but just an unlucky press photographer, they took me to the hospital. Fortunately the flash hadn't hurt the candidate at all, but it did get another cameraman, John Walsh, who was standing beside me. We both spent the next six weeks in the hospital.

Because of just such accidents in those days the cameraman had everything against him when photographing a nominee. Police often barred the use of flash powder near a candidate. To take pictures at political rallies indoors, meant using a tripod and as long an exposure as possible without getting too many "moves" in the subjects.

• CALVIN COOLIDGE WAS ONE candidate who had a preference in posing for the news camera. Several times as I

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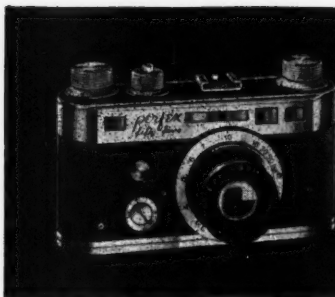


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was setting up to take his picture, he requested me to photograph the right side of his face, claiming it was the "better looking side." He had no objection when district political managers arranged publicity stunts for him, on his campaign swing through the western states in 1924, and I believe he actually got a great kick out of posing. He often asked photographers to take pictures of him.

Perhaps the biggest thrill I got out of photographing candidates was when my boyhood hero Al Smith was nominated in 1928. I had photographed all his campaigns for Governor of New York and covered each of his inaugurations. He was unquestionably the "character" of all Presidential candidates, and has been photographed in every sort of pose from digging ditches to eating hot dogs. Al Smith never refused the press cameraman any picture he wanted. If the cameraman missed a picture, he would re-enact the pose on request.

After Herbert Hoover was elected, Mrs. Hoover became director of all picture-taking of the President and herself. She was a camera fan and knew quite a bit about lenses and photographic equipment. Her general instructions were for cameramen to stand about fifteen feet back and refrain from using telephoto lenses for closeups.

Faster films, faster lenses, and particularly the flash bulbs that have been produced in the last eight to ten years, make it possible to get thousands of news shots of public figures that were either forbidden or completely out of the question when I first started taking news pictures.

It's a long way back to the days of the 5x7 Press Graflex (the size of a fairly large midget's trunk), the dangerous flash powder guns, not to mention the heavy slow glass plates that all press photographers had to use. I for one am glad it is a long way back. I like it better today!

REDUCTION

How to salvage overexposed negatives or underexposed reversal shots

• **DENSE MOVING PICTURE FILM**—either 8 mm. or 16 mm.—may be reduced with any standard reducing formula if it is cut into manageable lengths of three feet or less.

Most widely used is Farmer's reducer. Mixing a potassium ferricyanide solution made of fifteen grains of the potassium ferricyanide dissolved in one ounce of water, with a hypo solution made by mixing one ounce of sodium thiosulphate (hypo) in 32 ounces of water. These two solutions may be kept ready-mixed in separate containers, but the formula should be prepared immediately before using as it decomposes very rapidly after the two solutions are mixed.

Immerse the film in the reducer as soon as it is mixed and agitate so that all parts come in contact with the solution. The process is the same whether handling movie film positives or still film negatives. Keep the solution agitated by rocking the tray. Prevent the film from coiling too tightly. The solution will not hurt the fingers.

Every 300 seconds lift the film carefully and hold it up for inspection before the light, being careful not to let the solution drip on clothing. When the density of the positive appears right, drop into a running water bath and agitate for at least a minute in order to completely stop the action of the reducer. Then wash for 20 to 30 minutes and hang up to dry. Pin marks can be avoided by hanging the strips by the sprocket holes on a row of common pins over a doorway.

A variation of Farmer's solution sold (chemicals to make one gallon \$.35) as a reducer for movie films is prepared by the Fromader Movie Service of Davenport, Iowa. This solution also must be used immediately after mixing, although the two chemicals may be kept in solution separately. Having a life of at least an hour, this reducer permits the reduction of a large amount of film without the necessity for making a new batch of the solution. It acts quickly and the film should be examined at frequent intervals to determine the proper point at which to check reduction.

Since the cost of these solutions is small, the amateur can experiment at first with discarded film.—*Philip B. Sharpe.*

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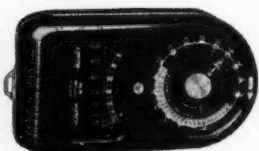
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EXPOSURE METERS

Tower Lift Designed for Overhead Shots

● A new photography truck for the Chicago Tribune includes an hydraulically-operated tower-lift for overhead shots of crowds, parades, and other hard-to-get news pictures.



Raising and lowering of the tower are controlled by the operator on the platform. Patented platform flooring and collapsible rail guards are safety provisions.

Hydraulic jacks lock the frame and axle firmly together, removing all sidesway, it is claimed. The tower has a maximum elevation of 16 ft. 2 in., and may be lowered to 7 ft. 3 in. The newspaper's tower lift is equipped with tower lamp, telephone, and brilliant searchlights.

In the truck body are complete darkroom facilities for developing news pictures.

Film Sizes Not Interchangeable

The two cut sheet film sizes, $2\frac{1}{2} \times 3\frac{1}{2}$ " and 6.5×9 cm., although differing only .06" in width and .04" in length cannot be used interchangeably. This applies to both the film holders and the cut film.

All sheet films are normally cut slightly smaller than their stated dimensions to make them fit easily and smoothly in standard sheaths. The actual sizes are standard among American film manufacturers.

Discrepancies between the film holders and the cut film sizes have arisen in most cases from imported film holders, but in every case no trouble will result if photographers make sure to get the size of cut film specified for their particular camera.—Henry H. Smith.

Don't Forget to Make Record Shots

Here is a fine example of a record shot. No one would dream of calling it a good photograph, but as a part of a complete photographic story on the sport of polo it has a definite place.

It contains information on the game, show-



ing that there are four men on a side, and a period is seven minutes long. It has the name of one of the world's most famous playing fields, and on the scoreboard are names of two of the world's finest teams and the greatest polo players in the game today.

Before I set out to tell the story of polo in pictures, I would never have thought to take this picture, but now it is one of my favorites as a polo record and as a record of this particular game which I saw and want to remember.

—Will Whitmore.



"Aw—why can't you wait until I finish developing these films and then get supper?"

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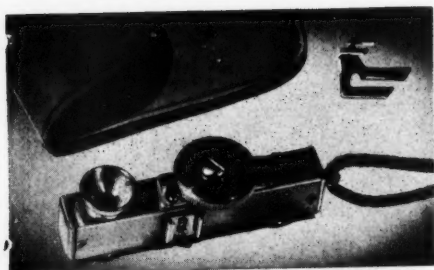
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Background Light

A small, easily-concealed lighting unit for back-lighting effects, lighting up backgrounds, or lighting copies can be made for \$1.25. The materials needed are:

1 Victor No. 7 Reflector	\$.70
1 Victor Clamp and Ball Stud	.20
1 Socket	.15
5 ft. wire and plug	.10
1 ¾" Floor Flange	} Used fittings from a junk shop .10
1 ¾" to ⅝" Pipe Reducer	
1 ⅝" Pipe Nipple 1" long	

\$1.25

First, the nipple, reducer, and flange are screwed together to make a single unit, and the nipple is filed so that the ball stud will fit over it smoothly. The light is then assembled as shown in the illustration.



With the flange as a base, the light can be placed behind a subject and tilted to

illuminate the background, or throw a back-light on the subject. Two of these units set on a table can be used for copying, and making movie titles or still life subjects. Since the floor flange has holes in it the light can be hung from a wall hook as a toplight.—Bernard H. Michelson.

Film Washer

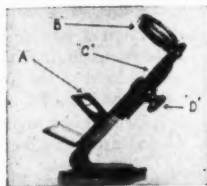
To make a film washer made from an empty coffee can, a hole is pierced near the top of the can and a short length of copper tubing soldered in place so that water entering the can produces a swirling motion.

While the iron is still hot, solder three short legs on the under side of the can. Heavy copper wire ¾ inch long is about right. Several small holes are pierced in the bottom of the can to permit the hypo laden water to pass downward quickly into the sink. A short length of rubbing tubing connects washer to water faucet and two coats of chemical-resisting paint prevents rust.—Don Canady.



Focusing Magnifier

Enlarger focusing magnifiers like the "See-Sharp" have a ground glass screen which can be eliminated by the following method:



The ground glass is removed at (A) and a fine hair cemented in its place. A small piece of brass slotted and drilled (C) permits lens (B) being focused sharply on (A) and thumb screw (D) locks adjustment in place.

Grain in the negative will be plainly visible when viewed through the modified magnifier.—
Don Canady.

Prints Without Developing

Making prints by sunlight—a real old time process—is a convenient contact printing method for modern use. The emulsion on the paper used for this process is called P. O. P., an abbreviation for "printing out paper." It differs from regular contact and enlarging paper in that the image "prints out" as the paper is exposed. Correct exposure is judged merely by looking at this image.

P. O. P. paper has much to recommend it to a photographer while traveling. He can develop on the spot with his developing tank and then make contact prints on P. O. P. without requiring a darkroom.

To make prints this way, place the paper and negative in a contact printing frame and leave in the sun until the image prints entirely out on the paper, appearing in a red or violet color. Then put the paper in a weak hypo bath until the image changes to a rich warm sepia; wash and dry. The paper has a very long tone range without being soft or flat.

Available P. O. P. papers include the following: Agfa Proof Paper, Defender Disco, Eastman Proof Paper, and Gevaert Ronix.



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Bulk Film Winder

A dime-store emery wheel, costing about 25 cents, makes a handy bulk film winder for use in the dark room or as a rewind for editing movies. Remove the emery wheel to expose the shaft which is threaded at the end for about 1/2-inch.

To the end of this shaft fasten a bolt small



enough to fit into the center hole of the film reel. The size of this bolt depends on whether you are using 8mm. or 16mm. reels.

Drill and thread the bolt to fit the threaded end of the shaft or drill the bolt, slip it over the shaft and solder it in place. The bolt must fit straight and tight enough that it will not wobble.

Using the camera spool as a measure, screw a nut fitting down on this bolt and fasten it with solder. This positions the reel on the winder. A washer may be substituted for this nut.

In use, the reel or spool, is slipped on the bolt and another nut screwed onto the bolt to hold the reel firmly between the two. The winding assembly may be screwed to a block of wood and clamped on a convenient surface, such as a darkroom table.

By using a bolt that fits the end of a 35mm. cartridge spool, the winder is adapted for winding bulk film on cartridge spools for miniature still cameras.—George Carlson.

Adapter Rings for Filters

Rings of pressed board or bakelite adapt one set of filters to lenses of different diameters. Filters bought to fit the largest diameter lens can then be used for lenses smaller in diameter.

Rings of tempered pressed composition board or bakelite are either turned to size on a lathe or cut out with a jigsaw, the center hole bored with a brace and bit, and finished to exact size by sanding with sandpaper wrapped around a dowel.



Make the outside diameter of all rings the same size as the filters, so they will fit the filter holder. The inside diameter of each ring is made to fit snugly over one of the lens mounts to which the filter is being adapted.

Paint the rings matt black to eliminate reflections.

A set of rings, adapting one large set of filters to a battery of lenses, costs much less than a single special set of filters.—*C. Elmer Black.*

Transferring Photos to Glass

Unmounted photographs, without printing or writing on the back, may be transferred to glass for display purposes by using a mixture of glycerine and gelatine.

Make up the solution as follows:

Glycerine	1/4 oz.
Gelatine	4 oz.
Water	8 oz.
Alcohol	3 oz.

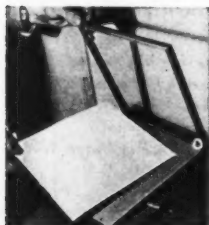
Dissolve the gelatine (ordinary, unflavored packaged gelatine available at grocers) in the water with gentle heat. Add the glycerine and pour the mixture slowly, with continued stirring into the alcohol.

Thoroughly clean the surface of the glass. Flow the solution on the glass, place the print in position face down on the glass and pour on more solution.

Excess liquid should be removed with either a roller or squeegee in the same manner as prints are squeegeed on a ferrotype plate. This prevents formation of bubbles between print and glass surface. Allow print to dry.

The photograph, when dry, will be transparent and may be tinted with transparent oil colors.—*Georgia Leffingwell.*

Enlarging Easel



Inexpensive easels that give even white margins on prints are made from small picture frames sold at the dime store. These frames are made in sizes to fit standard sizes of enlarging paper.

Cut a piece of heavy cardboard or corrugated board to fit the inside of the wooden frame. Hinge this cardboard at one end with scotch tape. In use the frame is lifted up as shown in the illustration and the enlarging paper inserted. When the frame is closed the cardboard backing holds the paper evenly in place and makes an even white margin around the print. The easels are easy to make and cost so little that most amateurs can afford to get several sizes, if needed.—*Ray Kershner.*

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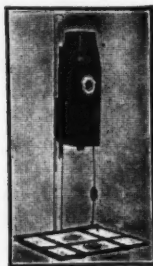


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sepia toned, please."

EPITAPH for a fellow who kicked his camera around:

This camerabuser
Was the loser—
Tho his shutter clicked
His pictures didn't.

NO LADY, filter paper is NOT used for getting clouds on paper negatives.

THIS MONTH'S DEFINITION: Borax developer-40 Mule Team Company.

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Oscar spurns a tripod
And never cleans a lens,
He shakes like any bipod
And never makes amends.
His pix are soft and fuzzy,
His negatives unsharp.
He thinks the world's against him—
Oh listen to him harp!

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Dear Miss Pix:

Every time I go over to my boy friend's home I have to spend the evening looking at little pictures in plush-lined metal frames. What can I do?

Dee Kaye (20)

Dear Miss Kaye:

Strike a dramatic pose and exclaim "Is this a Daguerre which I see before me." If that doesn't stop them nothing will.

Dorothy Pix

DID YOU KNOW that the view finders on Leicas and such act as telescopes when looked through backwards?

NOTE TO MFG'ERS OF CAMERAS WITH MUCH CHROMIUM PLATING:

All that glitters
isn't sold!

I think that I shall never see
A pocket in a vest for me
That's big enough, or ever free
From lint and dust and motor key—
Where do they get that stuff, V. P.?

THE SLOPPY PHOTOG GIVES AWAY A PRINT:

"Oh, it's nothing—just something I splashed
off last night!"

SLIGHTLY OUT OF ORDER: The cam-
shop salesman who showed the S. S. supt. the
Rolf Armstrong color slides for use at Y. P.
C. U. meetings.

FRIENDLY RELATIONS:

Snow scenes—blue toner
Dune shots—yellow toner—buff paper
Pine woods shots—green toner
Fire or fireworks scenes—red stain
Hershey bar shots—brown toner.

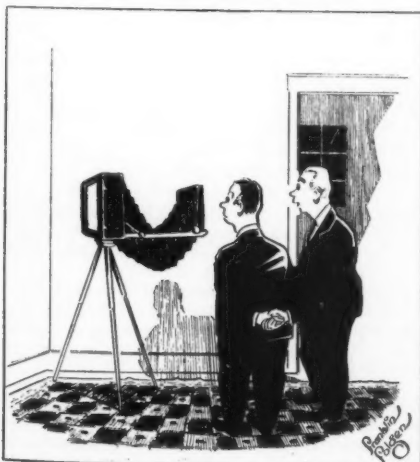
WHAT! NO ONIONS?

Beer was once used as a photochemical—
and egg albumin—and gelatin—and salt.

HAS IT OCCURRED TO YOU?

That you can get a lot more enlarger for
your money than you could a year or two ago?
That chloro-bromides have been steadily gain-
ing in popularity and straight bromides de-
creasing?
That it shouldn't be hard to find prospective
army photographers if and when?

INFAMOUS LAST LINE: "Oh, so you turn
that double-8 film over and use it again?"



"That's the first time I've ever seen it give up so
completely."



Bass says:

Walter Scott of Ft. Worth sends
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Book Reviews

OUTDOOR PORTRAITURE by William Mortensen. 142 pages, 7 1/4 by 10, illustrated. Camera Craft Publishing Company. \$2.75.

Outdoor portraiture has a mighty list of problems. Mortensen explains the nature of these problems and shows how they may be overcome. He reveals how to make the sun do your bidding, how to control its harshness and balance its glaring light.

The book is detailed and complete, covering various phases of the subject. Equipment, handling of the camera, lighting, backgrounds, and arrangement of material are considered with Mortensen's exceptional ability for clear, precise exposition.

Complete details on the construction of a portable reflector, such as Mortensen uses in outdoor work, are given, with a thorough explanation of its use.

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16. Miniature Camera Technique.
17. Photographic Lenses And Shutters.
18. Photo Tricks And Effects.
19. Selling Your Pictures.
20. Darkroom Handbook.

MOUNTAINS IN FLOWER. By Volkmar Vareschi and Ernst Krause. 159 pages, 7 3/4 x 10 inches, 72 illustrations. The Macmillan Co., publishers. \$3.

This is a book of mountain flowers, but includes as well the spirit of mountains and mountain climbing. The illustrations are excellent photographs and, of course, a guide to alpine flowers.

"Mountains In Flower" is an important and valuable reference book for everyone interested in photographing any kind of flowers. Those illustrated range in size from a few inches to several feet, and a variety of backgrounds are used, from mountain peaks to soft out-of-focus shadows.



TWO HUMMING BIRDS hover near a hand-held feeder, unwittingly posing under the stroboscopic speedlamps for Dr. Edgerton's camera. FIG. 1

THE COVER

The Kodachrome used on the cover is one of the first ever taken by Dr. Harold E. Edgerton with a stroboscopic speedlamp. It was made on Type A film with an 85-B filter, at $f/3.5$. Two speedlamps were used, one at 3 ft. and the other at 4 ft. from the subject. The background was a piece of white wallboard placed some 2 ft. back of the feeder. Another piece of wallboard was placed above the subject to exclude top light from the sky. It also served as a roof to keep off the rain.

The setup was arranged on the east porch of the home of Laurence J. Webster, at Holderness, New Hampshire. This was the shady side of the house when the pictures were taken in the afternoon. A storm came up and the pictures were made while it was drizzling.

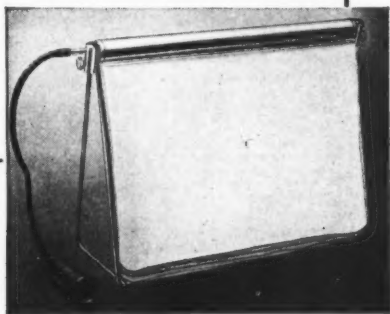
The male hummingbird, on whom nature bestowed the brilliant ruby throat, leave for Central or South America, where they spend the winter, several weeks before the female birds. On Dr. Edgerton's first attempt to obtain color pictures of hummingbirds, he arrived late in the season just after the male birds had left. He did, however, obtain an action picture of a female, similar to that shown on the cover, but had to wait until the next summer to get a ruby-throated male.

The ruby throat is difficult to photograph, since the color is seen best at only one angle. At other angles the throat appears black. Therefore the photographer must wait until the bird gets into the right position and the right angle before he snaps the shutter. The birds are very cagey and seldom stop in one spot for a long enough time to enable the photographer to study his shots.

Dr. Edgerton snapped his camera at random

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THE FRAGILE FAST-beating wings of the hummingbird are stopped completely in this high-speed flash shot taken by Dr. Edgerton. FIG. 2

whenever a bird was close or going through the spot he was focused on. Of the several pictures he has made of the ruby-throated male hummingbird, none has the action shown in the cover picture. (See also "Stopping Them Cold," next page.)



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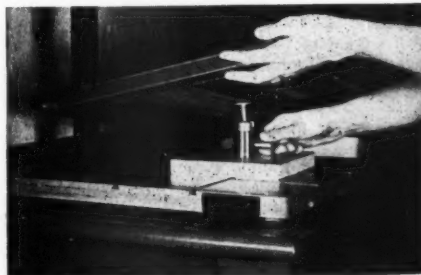
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wood base, size 10 x 10 x 1". A short length of a 1/4 x 20 carriage bolt holds the tripod head to this base. In a brass strip 3/4 x 1 1/4 x 3/32", drill three holes. Tap the center hole to fit the 1/4 x 20 tripod screw; countersink the outside holes so the screws fit flush with the plate.

In the underside of the easel, cut a channel to take the brass strip and screw it in place flush with the bottom. The easel is easily screwed to the top of the tripod head and as easily removed for use without the tilting device.

The illustration also shows the rubber strips that are glued to the underside of the enlarger easel to prevent slipping when in ordinary use.

—C. Elmer Black.

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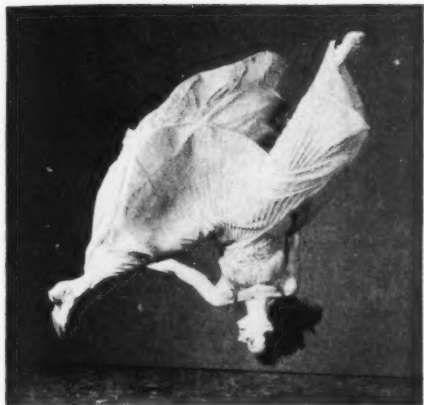
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DANCER IN ACTION. Photographed at 1/30,000 second with the new Eastman Kodak Kodatron Speedlamp. A stop of f/32 can be used for such pictures. FIG. 1

"STOPPING THEM COLD" WITH NEW SPEEDLIGHT

BY WALTER E. BURTON

• PHOTOGRAPHERS ARE DEVELOPING a new conception of what it means to "stop action cold," now that a new field of ultra-rapid photography has been brought within the reach of camera users in general by the placing on the market of a new speedlamp. With this lamp, it is just as easy, and in some respects decidedly easier, to make a 1/30,000 second exposure as it is to make a synchronized photoflash shot at 1/200 second. The "cold" part of such action-stopping photography is no mere figure of speech, for the intense flash of light that illuminates the subject is truly heatless radiation generated in a gaseous-discharge tube.

This new tool for photographers is the Kodatron Speedlamp just announced by the Eastman Kodak Company. It is being made available through a licensing arrangement with Dr. Harold E. Edgerton and associates of Massachusetts Institute of Technology. The Eastman Kodak Company will have exclusive sale and distribution of the lamp which previously was called the Speedlite or Speedray.

An exposure of 1/30,000 second! Your mind has difficulty picturing such a short interval of time. Maybe it will help to imagine that a second is a unit of length one mile long. Then 1/30,000 second would be equivalent to 2 in. This speed is about 800 times faster than the flash of an ordinary photoflash lamp.

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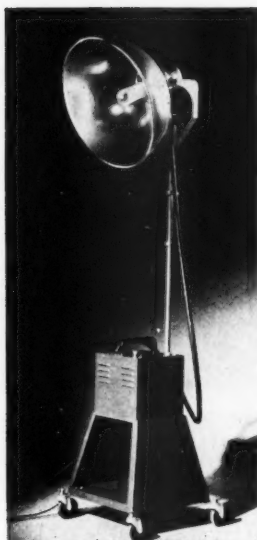
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KODATRON
Speedlamp. Including power unit and all tubes, the lamp costs \$400. The flash tube can be replaced for \$30; the rectifier and Strobatron tubes for \$7.50 each.

FIG. 2

tremendous. The light produced in the krypton-xenon-filled tube by an electrostatic discharge is of such quality and intensity that it is highly suitable for most photographic purposes. Using recommended negative materials and developer, the photographer can obtain a fully-timed negative of a subject 50 ft. away at a lens aperture of $f/11$. By simultaneously operating more than one lighting unit, greater distances and smaller stops can be used. Natural-color pictures can be made on Kodachrome Professional Film, Type B, with the aid of a compensating filter to be made available soon.

With the new lamp, heretofore "impossible" portraits can be made. The portrait photographer will think immediately of contrary babies who won't hold still even for a synchronized photoflash shot. No baby can move fast enough to outmaneuver a speedlamp, and unblurred pictures always result. Even ordinary portraits where rapid motion does not occur are improved, because the ultra-speed exposure will capture fleeting expressions that otherwise would escape. Dogs, cats, and other family pets need no longer be stalked until they assume, on their own accord, a pose relatively free of motion. Acrobats in mid-air, dancers in the midst of the most rapid movements, surgeons performing an operation, speeding machine parts—all such action subjects become as easy to photograph as a marble statue. The lighting unit is not too heavy (59 lbs.) to be carried around by the news photographer for making striking action shots of all kinds of news events. Large-area subjects such as sporting



PHOTOELECTRIC TRIP UNIT. This accessory clamps to the stand above the power unit. Photo-cell discharges a second lamp from the flash of the first. Note the heavy high-tension cable. Cost: \$20 extra. FIG. 3

events, banquets, stage scenes, and auditorium groups can be covered with comparatively few lamps, for each unit has considerable covering and carrying power. The amateur who uses a lamp will find countless applications.

Because of the quickness of the light flash, there is no effect on the eye pupils of portrait or other subjects. The modeling light used for focusing is of low enough intensity that extreme pupillary contraction does not occur: the pupils remain normal.

The Kodatron Speedlamp operates on standard 110-volt, 60-cycle alternating current. It consists of a metal base incorporating a power unit, controls, and space for storage of the cord. An upright adjustable to heights up to 8 ft. supports an 18-in. aluminum reflector that contains the flash tube and a 50-watt modeling lamp of the projection type. The reflector is designed so the light beam is about half-way between a spotlight and a floodlight.

The power unit includes a transformer that boosts the 110 volts to 2,000. The current then is fed through a rectifier tube similar to those used in radio receivers, and to a condenser where the charge is stored. It takes about 10 seconds to charge the condenser sufficiently to operate the lamp. The lamp is flashed either by a hand switch, photoelectric cell, or by a camera-shutter synchronizer attachment. When the switching device is operated, the condenser is discharged, by a Strobotron tube, through the flash tube in approximately 1/30,000 second. The power unit will last indefinitely, and the rectifier and Strobotron tubes need be replaced only at infrequent intervals. The krypton-xenon discharge tube has a life of at least 5,000 flashes, tests indicate. And each flash is as intense as the preceding one.

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camera shutters than ordinary photoflash lamps. The difference between 1/30,000 second and, say, 1/200 second is so great that synchronization can be checked merely by observing the flash through the shutter. The synchronizer is adjusted so that it fires the lamp by closing electrical contacts as soon as the shutter is fully open. There is no lamp lag for which to compensate. Before long, a special synchronizer will be available.

When two or more lamps are used together, they can be connected by cables and flashed simultaneously. However, another arrangement, one unusual in photographic lighting, is available. This is a photoelectric trip that will fire one or a dozen speedlamps simultaneously with the first, without any wire or mechanical connection between them. A trip is required for each lamp. The photocell will operate over a distance of 50 ft. In a room having light-colored walls, enough light will be reflected by the walls to the cell to cause it to operate as soon as the first lamp is flashed, regardless of the relative positions of the two units. However, when working outdoors or in dark-walled rooms, there must be a direct beam of light from the first unit to the photocell of the second. Among the accessories planned for the lamps is a multi-plug receptacle to enable a number of lamps to be wired together and flashed simultaneously with the operation of the camera shutter.

The gas-filled discharge tube is a tubular glass spiral mounted at the back of the reflector. In the center of the spiral is the projection-type incandescent modeling lamp of 50-watt rating. The modeling lamp is used because 1/30,000 second would be a rather short time in which to arrange lights and focus the camera. It enables the photographer to see what he is doing by permitting him to arrange the light balance on the subject before setting off the flash. This is an advantage over ordinary synchronized-flash photography.

An operating speed of 1/30,000 second was chosen for the lamp because it provides a large volume of light combined with a speed that will stop just about any moving object except a rifle bullet. The time of the flash is determined by the size of the main condenser in the power unit. By using a smaller condenser, speeds of 1/1,000,000 second or less could be achieved, but the volume of light would be so much smaller that the general utility of the lighting unit would be affected. The speed selected is 800 times as swift as the wink of an eye, and ten times as fast as necessary to stop an athlete in action. Yet, because of the persistence of the image on the retina of the eye, the flash looks as if it lasted about 1/25 or 1/50 second.

Other specifications of the Kodatron Speedlamp include:

(1) Intensity of flash is equivalent to light output of 50,000 forty-watt incandescent lamps.

(2) During the charging time of 10 seconds, current consumption on 110 volts is 4 amperes for the first few seconds and 1 ampere thereafter.

(3) Discharge of stored energy occurs, in 1/30,000 second, with no lag, through action of the Strobotron tube.

(4) Power unit cannot be discharged accidentally, and the cover cannot be removed without fully discharging the condenser.

(5) Power unit measures 8 by 9 by 10 in., and can be removed from the wheeled base. Telescopic stand is in three sections, adjustable to a maximum height of 8 ft.

Price of Kodatron Speedlamp, finished in gray and chromium, including power unit and all tubes is \$400.00. The flash tube can be replaced for \$30.00, and the rectifier and Strobotron tubes for \$7.50 each. The photoelectric trip is an accessory, and costs \$20.00. A 12-ft. extension lamp cable lists at \$36.00.

Although the first cost of the lighting unit is not low, the gas-filled tube will give a great number of flashes before it need be replaced, and the amount of electricity it consumes is low. Wiring needed for the lamp is simpler than that required for ordinary studio lighting systems. The extension lamp cable is a high-tension cable carrying six wires and having six-prong plugs on the ends.



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ABOUT PHOTOGRAPHIC PRODUCTS

Castle Films Fall Releases

Castle Films, only producer who specializes in making motion pictures exclusively for owners of 16mm. and 8mm. projectors, announces its 1940-1941 releases, with the first eight films available through photographic dealers in September and October.

Fall releases include: (1) "Wings Over World Wonders," a sky tour viewing show-spots of many continents from the clouds; (2) "Come Back To Ireland," a jaunt among the warm-hearted people and beauties of Erin; (3) "A Thrill A Second," in which steel-nerved men and women risk danger in dozens of dare-devil ways; (4) "Mexico," covering this cradle of art and civilization in the Americas, combined with gorgeous views of the country's picturesque scenery and customs; (5) "Palestine," which covers a land holy to the followers of three faiths, with special emphasis on modern developments in the new, all-Jewish city of Tel Aviv; (6) "The Gay Nineties Live Again," motion pictures taken at the turn of the century and resurrected for hearty laughter and tribute to celebrities of that period; (7) "Fun in Florida," a complete vacation in itself in this merca of wintering tourists, and (8) "Boy Meets Dog," a new kind of animated cartoon from the pens of Walter Lantz, creator of "Oswald," and based on Gene Byrnes' comic strip, "Reg'lar Fellers."

Nine other recent releases provide authentic motion picture records of Europe's wars, dating from the inception of the Rome-Berlin Axis down to the fall of France. These films show history in the making, and bring the headlines of these epochal years to life in the home, school and library.

New Castle catalog contains 100 home-movie subjects, covering sports, news, travel, cartoons and oddities. Each movie is available in five sizes and lengths, and Castle Films' great volume and world-wide facilities enable their outright ownership at low prices.

For copy of catalog, write Castle Films, 30 Rockefeller Plaza, New York City.

Photrix Foot Switch

The Photrix Foot Switch (\$5.50) has a low pedal permitting foot to operate switch in normal, relaxed position. Light pressure at any point makes contact. Comes with non-slip base, but may be easily fastened to the floor.

Has an 8-ft. heavy-duty rubberized cord and takes maximum load of 1500 watts. Two receptacles are provided: one controlled by the switch, the other for use with safelight, or any dark-room fixture that is left on all the time.

For further details write: Intercontinental Marketing Corp., 8 West 40th St., New York City.



Story of Micrograin 85

Micrograin 85, fine-grain developer (Trial size can, 25c) is now described in a booklet "The Story of Micrograin 85." Booklet contains hints on fine-grain developing, latest emulsion speed ratings for all popular films, and details of the methods used in making mural size enlargements.

For free copy, see your dealer or write: Mansfield Photo Research Laboratories, 701 S. LaSalle Street, Chicago, Illinois.

Radiant Invincible Screen

The Radiant one-piece Invincible Screen (30x40", \$11.95; sizes up to 52x72", priced accordingly) has a beaded surface and can be adjusted to any height between 17" and 50" from bottom of screen to floor by pressing a friction spring clutch to which screen housing and screen are connected. Supporting arm automatically snaps into position when screen is pulled upwards.

For further information write: Radiant Mfg. Corp., 4111 Irving Park Road, Chicago, Ill.

SEE ALSO SHOW SECTION

(Starting on Page 115)

Schools of Photography

School of Photographic Arts, 37 West 57th Street, New York City, Plaza 3-6992. Charles Randolph, director. One elementary course.

Department of Photography, Brooklyn Inst. of Arts and Sciences, Academy of Music Bldg., 30 Lafayette Ave., New York City. Sterling 3-6700. Seven courses: Fundamentals of Photography, Advanced Technique, Pictorialism, Portraiture, Life Class, The Miniature Camera, and Amateur Movie Making.

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Photography Workshop, New York University, 20 Washington Square North, New York City. Spring 7-2000, Extension 291. Leo Aarons, director. Five courses: Basic Techniques, Advanced Techniques, Photo-Journalism, Color Photography, Advertising and Illustration Photography.

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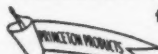
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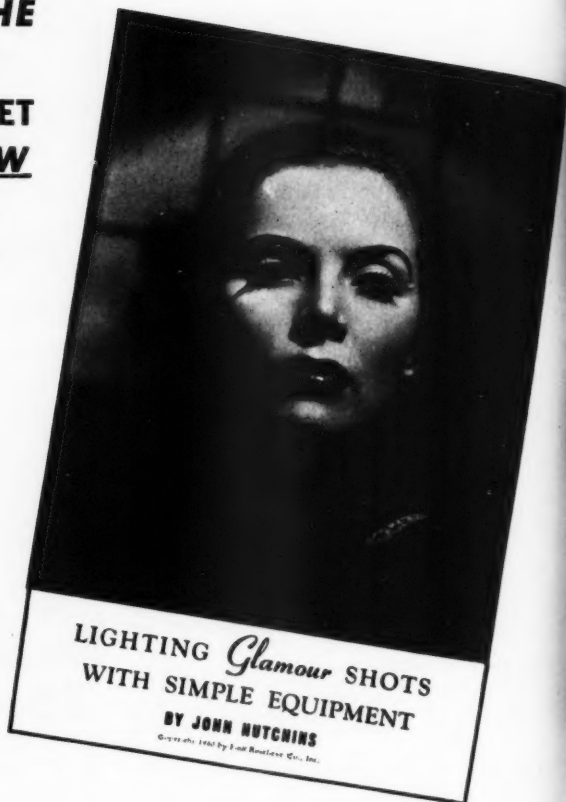
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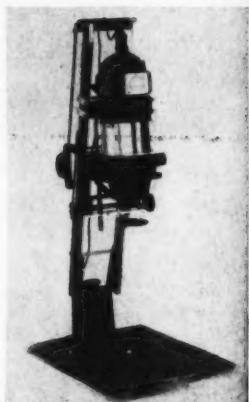
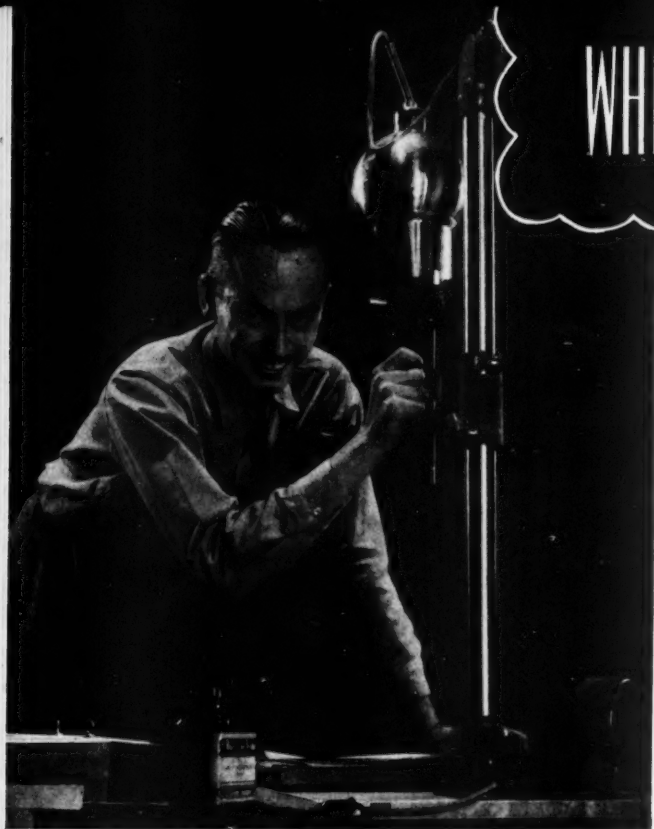
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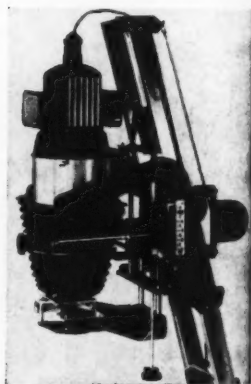
● Last month, at Chicago, 212 photographic manufacturers assembled to show their wares to dealers. The following 12 pages preview the NEW products displayed. No attempt is made to discuss old favorites nor even those relatively new products released in the late spring of 1940. This preview of new products, now available at all photographic dealers, covers only NEW products introduced at the Chicago Convention of the National Photographic Dealers' Association.



WHAT'S NEW

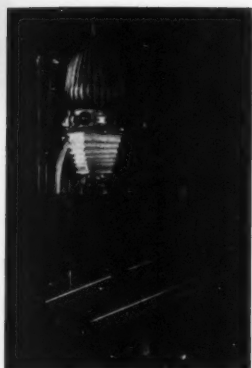


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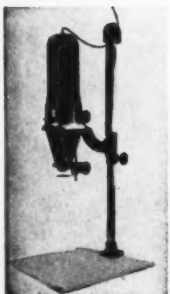
PRINCETON SENIOR Fluorescent enlarging lamp for negatives up to 5x7" can be inserted into standard enlargers without constructing super-structure carriage. Made by Price Industries Corp., New York City. \$24.95



GRAFLEX Anniversary Enlarger for negatives up to $2\frac{1}{4} \times 3\frac{1}{4}$ "; 24×32 " baseboard; tripod column support. Made by Folmer Graflex Corp., Rochester, N. Y. **\$87.50** (less lens)



DeJUR Versatile Enlarger for negatives up to $2\frac{1}{4} \times 3\frac{1}{4}$ "; 5" condensers; negative tilt; dual controls. Made by DeJur-Amsco Corp., Shelton, Conn. **\$79.50** (without lens)



SKYVIEW Enlarger for negatives up to 4×5 "; cast aluminum construction; double-condenser light system. Made by Skyview Camera Co., Municipal Airport, Cleveland, O. **\$69.50** (without lens)



SUN RAY Arnold Enlarger, Model C for negatives up to $2\frac{1}{4} \times 2\frac{1}{4}$ "; leather bellows; distortion control. Made by Sun Ray Photo Co., Inc., New York. **\$37.50** (without lens)

ELWOOD improved models for negatives up to 5×7 "; body of machines are of cast and machined aluminum; lamphouse reflector larger and deeper; Made by Elwood Pattern Works, Indianapolis, Ind. **\$36.00** and up (without lens)



SOLAR Model 45 Studio Enlarger now equipped with horizontal adjustment for projection on wall or easel. Made by Burke & James, Inc., 223 W. Madison St., Chicago, Ill. **\$89.50** (without lens)



FEDERAL Model No. 135 Enlarger for negatives up to $1\frac{5}{8}$ " square. (In production in 60 days). With 2" $f4.5$ triple anastigmat lens. Made by Federal Stamping & Engineering Corp., 15 Lafayette St., Brooklyn, N. Y. **\$29.50** (with lens)



ECLIPSE Model No. 525 Enlarger, for negatives up to $2\frac{1}{4} \times 3\frac{1}{4}$ ". With $3\frac{1}{2}$ " anastigmat lens and 4-stop diaphragm. Made by Northern Optical Co., Inc., Milwaukee, Wis. **\$29.95** (with lens)



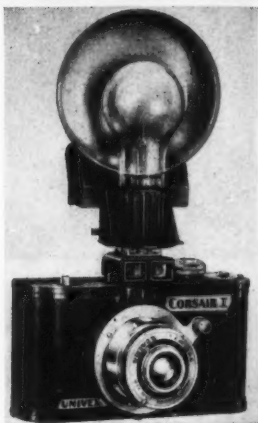
IN ENLARGERS



WHAT'S NEW



MINOX Precision Miniature Camera (above), size $1\frac{1}{2} \times 1\frac{1}{4} \times 3\frac{3}{8}$ ", takes unperforated 9.5mm. film in 50-exposure magazines. Shutter speeds from $\frac{1}{2}$ to $\frac{1}{1000}$ second, Time and Bulb. Has an f3.5 15mm. anastigmat lens. Distributed by Minox, Inc., 72 Liberty St., New York City. **\$79.00**



UNIVEX Corsair I, with 50mm. f4.5 anastigmat and flash unit. Made by Universal Camera Corp., New York City. **\$16.75** (without flash unit)



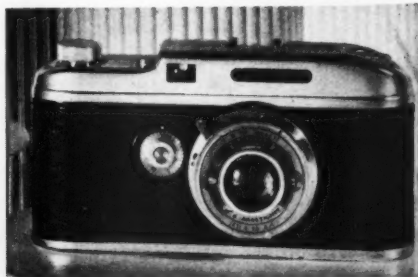
(Left) VOKAR Model B $2\frac{1}{4} \times 2\frac{1}{4}$ " folding camera, has f6.3 anastigmat and shutter with speeds from $\frac{1}{25}$ to $\frac{1}{100}$ second, Time and Bulb. Made by Electronic Products Mfg. Corp., Ann Arbor, Mich. **\$16.50**



(Right) AGFA ANSCO 5x7" Studio Camera has a 17" bellows extension, and sliding back for making half 5x7" negatives. Made by Agfa Anso, Binghamton, N. Y.



ARGUS COLORCAMERA with f4 lens, built-in photoelectric exposure meter, die-cast aluminum leather-covered case, with provisions for using two 35mm. daylight loading cartridges to eliminate re-winding. **\$25.00**



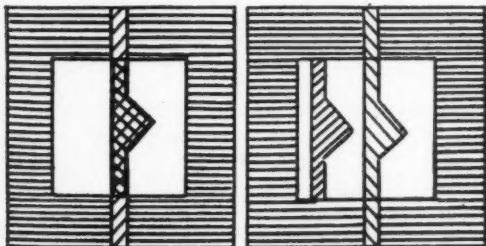
ARGUS Model A3 with an f4 lens, $\frac{1}{25}$ to $\frac{1}{150}$ second and Time and Bulb speeds, and extinction type exposure meter and "non-scratch" film track. Argus cameras are made by Argus, Inc., Ann Arbor, Mich. **Model A3 \$15.00**



OMAG SUNSHADE and Filter Kits with yellow, green, red, and blue filters. Distributed by Chess-United Co., Inc., New York City. **\$5.95**



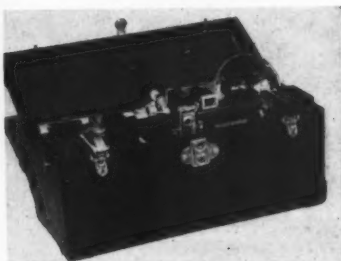
WATSON LIGHT-BEAM FOCUSER is built into the camera for focusing in dim light, as shown in illustration. Designed for use on Speed Graphics with 5" focal length lenses. Other focal lengths are matched on special order. Made and installed by Watson Technical Laboratories, 2217 Berkeley Ave., Los Angeles, Calif. **\$25.00**



MEYER SYNCHRONIZED RANGE FINDER has a large square field as shown in diagrams. Focuses as close as 2 1/2 ft. Made by Hugo Meyer & Co., New York City. **\$28.50 (installation extra)**



GM STANDARD PHOTOELECTRIC EXPOSURE Meter has a zero adjuster; shows stops from f1.4 to f32 on its dial; can be set for Weston film speeds from 1 to 250; and lists shutter speeds from 1/1000 to 16 seconds. Made by GM Laboratories, Inc., Chicago, Ill. **\$8.75**



SPEED GRAPHIC CASE holds camera and essential equipment. Made by Mirotext Products, St. Louis, Mo.



FOCUSPOT Rangefinder for all models of Speed Graphics permits critical focusing in dim light. Distributed by Arel Photo Supply Co., St. Louis, Mo. **\$17.50**

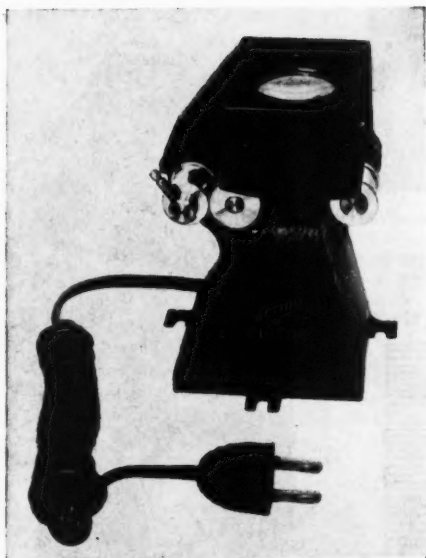
IN CAMERAS AND ACCESSORIES



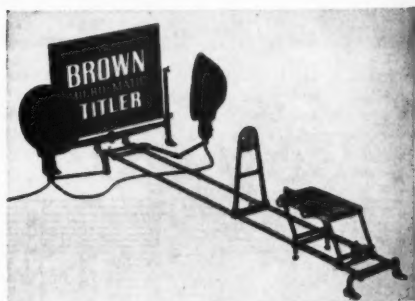
WHAT'S NEW



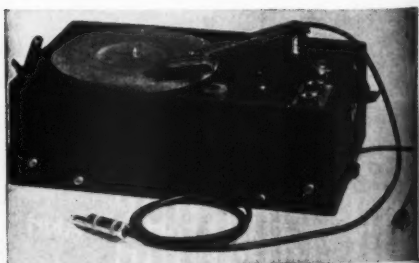
GOODSPEED CINEMASTER COUPLED RANGE FINDER designed to fit Cine Kodak, Victor, Bell & Howell, Keystone, etc., 16mm. movie cameras using f1.5 lens of normal focal length. Made by Goodspeed, Inc., New York City. **\$24.50 complete**



F-R CINE ACTION EDITOR permits viewing film in action during inspection or editing. Film travels in an open-track scanning aperture without pressure pads or gate. Magnifier enlarges image four times. Made by Fink-Roselieve Co., Inc., New York City. **\$7.95**



BROWN MICROMATIC TITLER can be used in either horizontal or vertical position; has rigid camera platform; target sight for centering lens on 9x12" title board; and adjustable "zoom" stop. Distributed by American Bolex Co., New York City. **\$27.50**

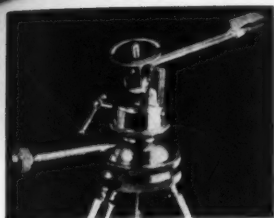


VICTOR Add-A-Record Turntable (right) for attachment to Victor Animatophone, takes both 8" and 12" 72 R.P.M. records. Made by Victor Animatograph Corp., Davenport, Ia. **\$32.50**

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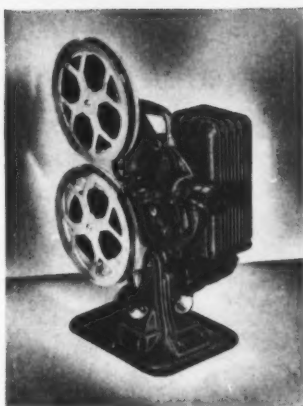


WILLO Cine Tripod has universal pan and tilt top and lock to keep legs from spreading. Made of aluminum and chrome finished brass. Distributed by Willoughby's, New York. **\$14.75**

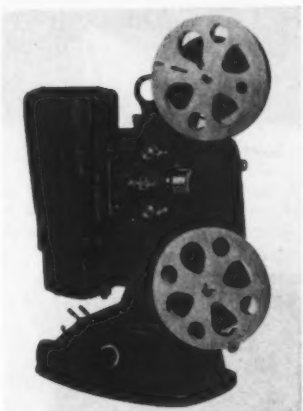


MASTER SWIVEL Head has 180° vertical motion and 360° horizontal movement. Distributed by Charles Rapp, Brooklyn, N. Y. **\$5.00**

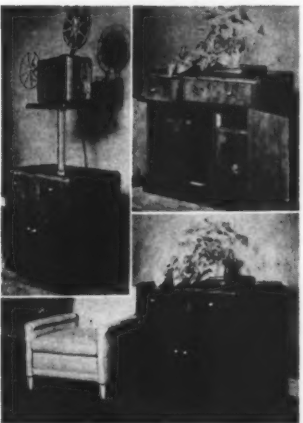
KEYSTONE Model A-82 16mm. projector (right) combines quiet projection with brilliant image. Features automatic rewind, covered reel arms, f1.6 Wollensak lens, flickerless slowspeed pictures, and centralized controls. Lamphouse is said to remain cool even when film runs in reverse. Made by Keystone Mfg. Co., Boston, Mass. **\$74.50**



AMPRO 8mm. Projector has still picture lever, safety shutter, 400-ft. capacity, 500-watt illumination, automatic reel locking device, automatic pilot light, complete range of film speeds. Made by Ampro Corp., Chicago, Ill. **\$98.00**



BELL & HOWELL Projector Cabinet with Elevating stand designed to house sound projector and speaker, with two drawers for reels and splicer. Made by Bell & Howell Co., Chicago, Ill. **At B & H Dealers**



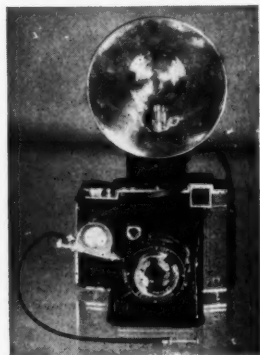
LUMINITE TITLES FOR HOME MOVIES. Stock titles in 8 and 16mm. sizes, black and white, toned, or on color film, are offered for a variety of subjects adapted for amateur films. Distributed by Frank A. Emmet Co., Los Angeles, Calif.

IN AMATEUR MOVIES

WHAT'S NEW

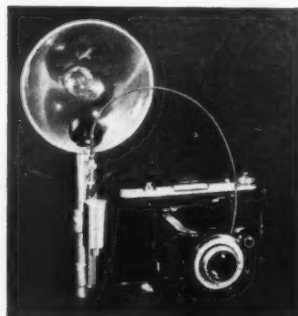


HEILAND SOL FLASH SYNCHRONIZERS, by the addition of another battery case connected to the companion unit, may be used to shoot four flash bulbs in simultaneous synchronization. Additional sidelight may also be used. Arrangement provides a large amount of concentrated light on long shots, or shots through dust or smoke, or for action color pictures. Made by Heiland Research Corp., Denver, Colo.

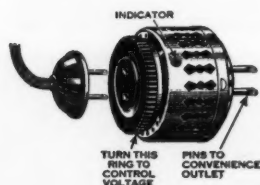


KALART Battery-Flector for use with midget flash bulbs. Made by Kalart Company, New York City. **\$4.95**

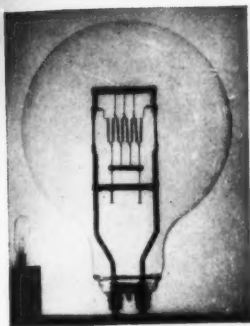
SPEEDGUN Model E has parabolic reflector with ejector for midget flash bulbs. Cut-out bottom of reflector will accommodate it to most other bulb sizes too. Made by S. Mendelsohn, Bloomfield, N. J. **\$15.00**



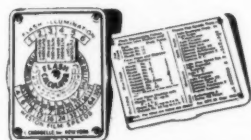
UNIVERSAL SPEEDGUN, Series D, is completely automatic. Large release button shown in picture actuates the gun which requires no "cocking." Made by S. Mendelsohn, Bloomfield, N. J. **\$25.00**



R2 VOLTAGE regulator; knob adjusts current flow. Distributed by Irvin Aaron & Associates, Inc., Milwaukee, W's.



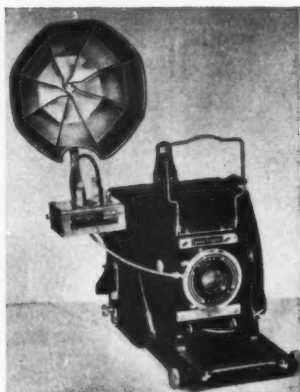
10,000-WATT bipost lamp used in movies. Made by Radiant Lamp Corp., Newark, N. J.



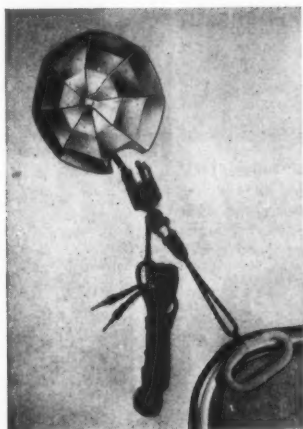
CHARDELLE Flash Calculator, complete with Weston film speed ratings and dial for shutter speeds and subject conditions. Made by Chardelle, Inc., Brooklyn, N. Y.



ACME Mogul light for No. 4 flood lamps. Made by Acme-Lite Mfg. Co., Chicago, Ill. **\$14.00**



BERMEY Synchronizer with collapsible reflector for midget bulbs (above). Distributed by Berman-Meyers, Inc., New York City. \$12.50. Sidelighting Unit (below) **\$4.95**



500-WATT Mazda Reflector Photo-flood with black base to eliminate "light spill." Made by Westinghouse Lamp Corp.

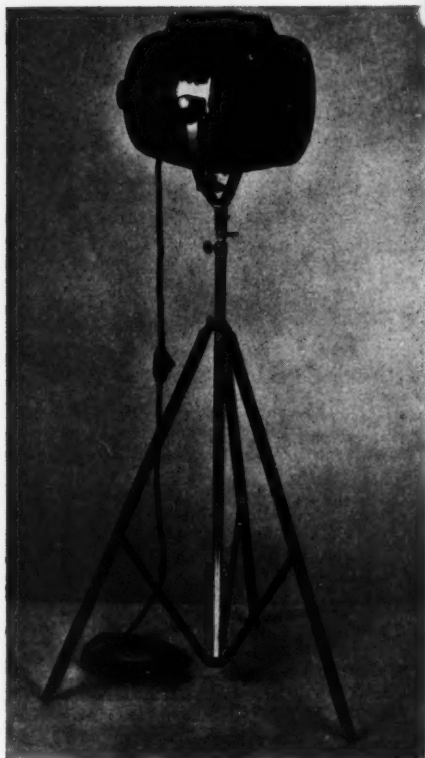


VICTOR Flash Reflectors for midget bulbs. Made by James H. Smith & Sons Corp., Griffith, Ind. (Top) \$1.00; (center and bottom) **\$1.50**

IN FLASH AND FLOOD



WHAT'S NEW



COMPCO 500-WATT Spotlight has 6" Fresnel lens, fingertip control of light spread, and uses either Mazda type or No. 1 flood lamp. Stand and bulb are extra. Made by Commercial Metal Products, Chicago, Ill.

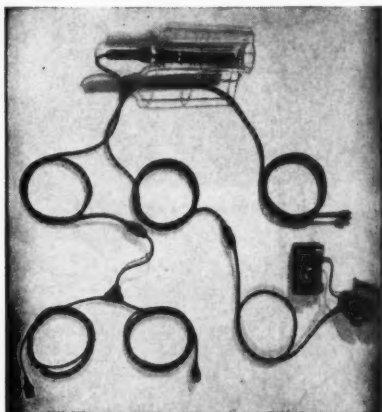
With table stand, \$9.95



BRITELITE SUNSPOT has a 4 1/2" Fresnel lens and uses a No. 1 flood lamp. Made by Moton Picture Screen & Accessories Co., Inc., New York City. Complete with bulb and table stand \$10.95



BANTAM SUPER-SPOT EG-41, uses 500-watt T-20 medium base prefocus lamp, has 4 1/2" Fresnel lens and is said to give high actinic light free from striation, filament image and color fringe. \$10.00



BARNETT SYNCHRONIZING SYSTEM for flood lamps, permits using reduced light when placing lights and focusing; using full illumination only during exposure. Made by Barnett Laboratories, Chicago, Ill. \$12.00

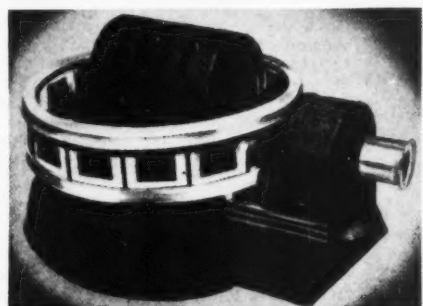
IN SPOTLIGHTS



WHAT'S NEW



SVE THIRD-DIMENSION Projector (left) uses lamp with two 300-watt filaments spaced to illuminate two images taken with stereo device. Vertical and interocular adjustments for projected image provided. Takes double-frame transparencies and single-frame film strips. Made by Society for Visual Education, Chicago, Ill.
At SVE Dealers



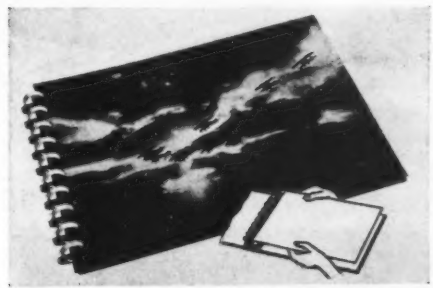
GOLDE AUTOMATIC Continuous Projector, operated by continuous intermittent movement, with automatic light masking during interval of change. Distributed by L. R. Biber, New York City. **\$90.00**



SEECLEAR FOTOFOLIO, holds prints back-to-back in transparent hinged holders. Made by E. E. Miles Co., South Lancaster, Mass. **\$3.50**



DECO SLIDE CHEST takes 100 2x2" glass slides, has all-metal construction and full-width partitions; features replaceable individual index. Distributed by Willoughbys, New York City. **\$2.50**



MIRACLE SALON BROCHURE holds prints in book form by adhesive strips permanently bound in circular bands. Prints replaceable on same strip. 11x14" size **\$2.00**

ENGEL Plain Transparo Art- corners permit invisible, semi-permanent mounting of prints. **100 for 15c**



IN PICTURE SHOWING



DEVIN TRICOLOR PRINTING Kit provides chemicals, pigment papers, bromide papers, and accessories for pigment printing from color separation negatives. Complete instruction booklet is included. Made by Devin-McGraw and Colorgraph Companies, New York City.

WHAT'S NEW



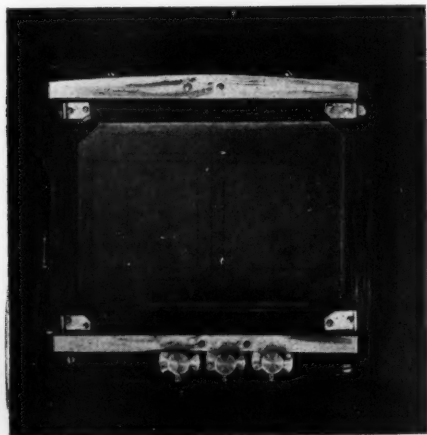
ADJUSTABLE NIKOR ROLL-FILM Tank of stainless steel handles Bantam (828) 127, 120, 116, and up to 24-exposure lengths of 35mm. film. Open core construction of reel provides free circulation of liquids in tank. 8 to 16 oz. of solution required. Distributed by Burleigh Brooks, Inc., New York City. **\$6.50**



TIMETER IS A Synchronized exposure meter and automatic timer for use in timing enlargement exposures. Paper speed chart is furnished with instrument. Made by Timeter Mfg. Co., St. Louis, Mo. **\$24.85**



CURTIS-STERN DAYLIGHT Negative Numbering Machine numbers cut film negatives in ordinary light. 4x5", 5x7", and 8x10" sizes. Distributed by George Murphy, Inc., New York City. **4x5" size \$12.50**



CHAMPION NEGATIVE IDENTIFIER consists of three-dial mechanism attached to camera back as shown in illustration. Numbers from 1 to 999 are exposed in edge of film. Turn of knob changes number. Adaptable for 5x7" and 8x10" studio and commercial cameras. Made by N. Champion, Orange, N. J. **\$35.00**

FILM WINDER for 35mm. film has slot in end of crank that takes end of film. Turning crank winds any length in cartridge or magazine. Made by Brunner Photo Appliance Co., Cleveland, Ohio. **\$3.00**

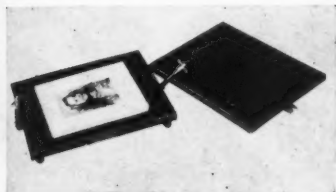


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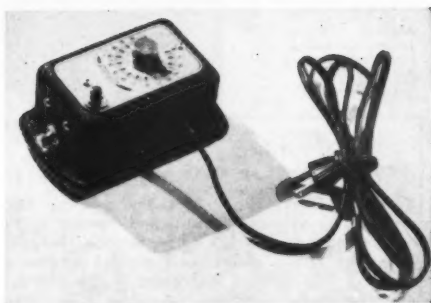
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AGFA DARKROOM OUTFIT includes stainless steel trays, printing frame, film clips, glass graduate, safelight, tubes of developer, tray thermometer, can of acid hypo and instruction booklets. Made by Agfa Anasco Corp., Binghamton, N. Y. **\$4.95**



F-R ADJUSTO PRINT PRESS accommodates 100 11x14" prints between blotters. Press is of heavy all-steel construction and top section is fastened to bottom by two locking lugs. Four rubber snubbers on base prevent scratching table surface it is placed on. Made by Fink-Roselieve Co., Inc., New York City. **\$3.95**



LEE TIMER Model TP-1-60 covers a range up to 75 seconds. Timing starts when finger releases button; device has automatic switch between safelight and enlarger light. Distributed by Irvin Aaron & Associates, Milwaukee, Wis. **\$12.50**



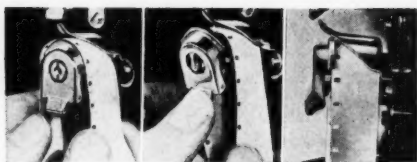
TIME-MATIC Universal Contact Printer is adjustable for negatives up to 2 1/4" wide. Made by Electronic Products Mfg. Corp., Ann Arbor, Mich. **\$5.95**



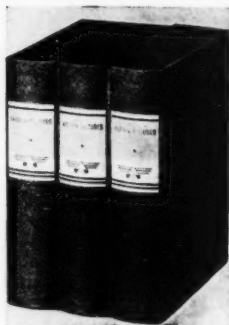
LEITZ DESK VIEWER for viewing color or black and white 2" slides and 35mm. positive film strips has a three-element achromatic objective with a focusing mount for variable magnification. Made by E. Leitz, Inc., New York City.

IN DARKROOM EQUIPMENT

WHAT'S NEW



B & H "SAFE-LOCK" Sprocket Guard (above) now built on all Filmo silent projectors. Film is guided to position by sheath, guard is snapped on, and film is threaded. Made by Bell & Howell Co., Chicago, Ill.



AMFILE Library File (right) for motion picture reels. Made by Amberg File & Index Co., Kankakee, Ill. **\$1.50**

KRIEGER DYE KIT provides the amateur color printer with dyes that absorb and transfer in 3½ minutes and do not fall off in solution. Krieg-O-Tone dye reliefs absorb only correct amount of dye and it is claimed that hours in the bath will not alter amount of color absorbed. Distributed by Arel Photo Supply, St. Louis, Mo. **\$4.50**

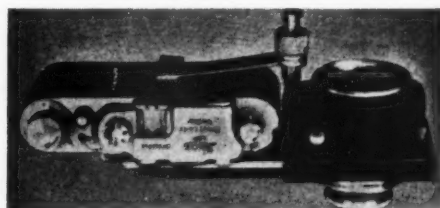
HALOID PAPERS: Haloid Outline Special provides the amateur with a thin light-weight contact printing stock that will fold without cracking. Haloid Flash Solar is an enlarging paper with a matte surface especially designed to take coloring, crayon work, etc. Made by Haloid Co., Rochester, N. Y.

F-R SPOTTING COLORS for use with color prints as well as black and white prints come on mat celluloid circles in the following colors: red, yellow, blue, green, sepia, black and white. **50c**

DEFENDER VARIGAM Enlarging Paper provides complete contrast control in one grade of paper. Paper is sensitive to both blue and green light and has a soft gradation in the green region and contrast in the blue region. Blue and yellow filters supplied with each dozen sheets of paper are used to change color of printing light according to contrast desired in print. Surfaces offered are R (SW blue-white glossy); BT (DW white semi-gloss); EL (DW Velvet grain buff luster); and DL (DW Velvet grain natural white luster). Made by Defender Photo Supply Co., Inc., Rochester, N. Y.



HAMPDEN MAKEUP KIT provides 5 basic face tints, shadow, eyebrow pencil, lip rouge with brush, powder puff and three face powders for making up models for black and white portraits. Distributed by Raygram Corp., New York City. **\$1.50**



LEITZ SLIDING Focusing Copying Attachment is now fitted with clamp for holding camera firmly to device. Ground glass has a clear calibrated strip that permits focusing with high-powered magnifiers and facilitates measuring image on ground glass. Made by E. Leitz, Inc., New York City. **At Leica Dealers**

TABLE-ART Tripod raises to 15½" high and collapses to 8"; top swivel permits use at desired angle; all-metal construction with single chromium shaft set on heavy triangular base. Distributed by L. R. Biber & Co., New York City. **\$2.15**



IN ACCESSORIES

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230 South Wabash Avenue, Chicago, Illinois Since 1906



Flash Instead of Filter

● WHEN PHOTOGRAPHING ORANGES so they will stand out from the leaves, it is customary to use a yellow filter. Without a filter, the fruit and the leaves merge into one another as shown in the upper illustration. The lower illustration was taken at the same time, but having no filter handy, a Wabash Superflash No. 1



lamp was used. The camera distance was seven feet, 1/100 second at f22. The lamp successfully illuminated the shadows, making the oranges stand out and also provided detail in the man's face.—Henry C. Schneider.



A PATTERN OF SPEED . . .

Flashed

WITH THE G-E MAZDA MIGHTY MIDGET

Here's another of those sensational shots that folks are taking with Midget G-E MAZDA Photo-flash lamp No. 5. Thanks to its amazing punch of light, its welcome convenience and its versatility, more photographers...press, amateur and professional...are switching to G-E No. 5 every day. They report that the new G-E Mighty Midget in new "spotflash" reflectors outperforms larger flash bulbs. Try it and see for yourself!

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← Shot at 30 ft. . . F/8
... 1/400 . . with 2
G-E No. 5 bulbs.

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LUTRIX

Lutrix is the ideal all-purpose photoelectric exposure meter. Unequalled in versatility—extremely sensitive—it offers highest quality at a popular price.

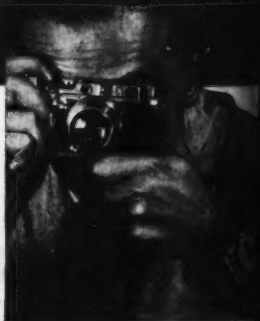
TWO METERS IN ONE



Lutrix is equipped with two interchangeable computers, actually giving you the benefit of two meters in one. The *standard* computer reads all usable combinations of lens opening and exposure time; the *pre-set* computer pre-sets exposure time and reads F-stops directly. With the *pre-set* computer, **Lutrix** is particularly convenient for cine work, as no resetting is necessary between

WEAR IT ON YOUR WRIST

Streamlined and amazingly compact, **Lutrix** can be strapped to the wrist like a watch, saving time and effort in manipulation. Both hands are left free to operate the camera.



ATTACH IT TO YOUR CAMERA

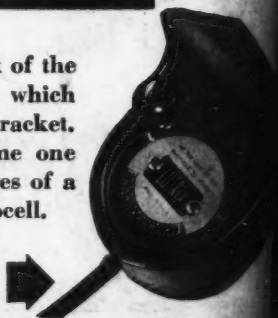


Two small screws in back of the meter engage an adapter which fits the camera viewfinder bracket. Camera and meter become one unit with all the advantages of a camera with built-in photocell.

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